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Rail-Road News.

European and North American Railway.

A London paper of the 18th ult., makes the following remarks upon this important subject

It is with extreme satisfaction we observe, that at no distant date, the Atlantic is to be bridged over by means of such an improved system of communication, that the old world and the new will, by means of rail and steam, be brought nearer to each other than Leith and London are by the average voyages of their smacks. From the westernmost point of Galway to the easternmost point of North America, the sea voyage will be easy of accomplishment within five days, and already the plans of the railroads from these points to the interior of both countries, have been fully matured, and the undertakings, to a great extent subscribed for.

North America will then be to England what Scotland is now. The inhabitants of each country will reside almost indifferently in either. Our Senators, in place of hastening the close of the session to get off to grouse and the moors, will bolt from St. Stephen's to the prairies and buffalo hunting. Our fashionable *ennuyes* will winter at New Orleans or St. Louis, in place of Rome or Naples, and our nobility and gentry will have their demesnes and mansions in the western or middle States, as well as in the mother country. The intercourse will be so intimate and universal, as materially to modify the habits of life and thought in both hemispheres. England will become more republican, and America less democratic. The distinctions and jealousies of the two States will become obliterated by becoming ridiculous; because people of the same origin, blood, language, history, literature and traditions, in daily and hourly communion with each other—those having the strongest social and moral affinities being the most likely to find each other out.

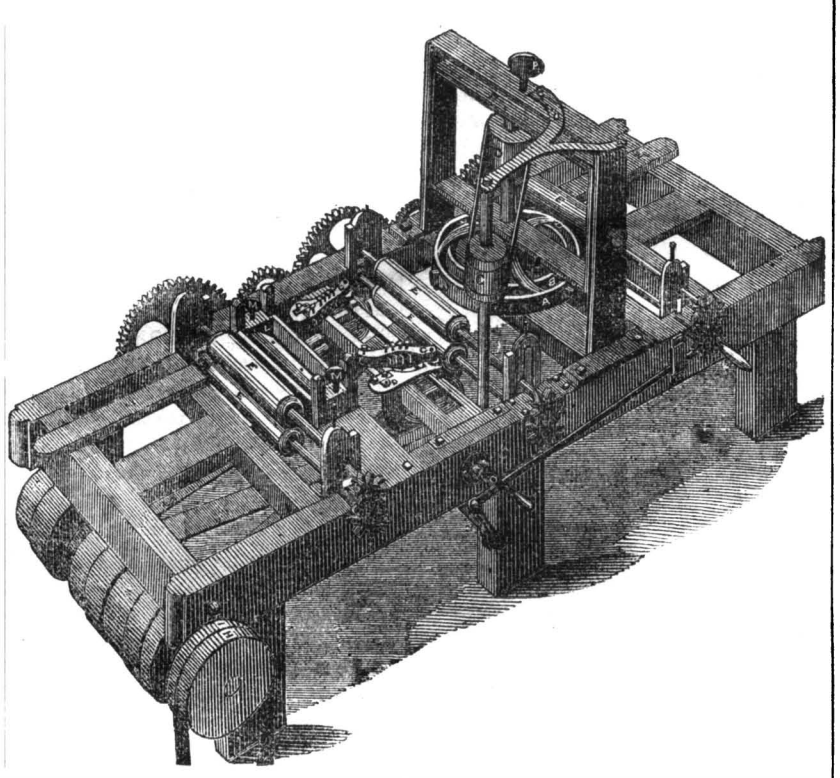
Let this tide of intercourse once fairly set in—let the United States become the fashionable, and the easy retrenching and retiring resort of our nobility, gentry, farmers, perhaps, and superanuated merchants, and the tide will flow on like the Propontic, 'which knows no retiring ebb.'

Rochester and Niagara Falls Railroad.

The Rochester people having become somewhat frightened for the loss of trade by the New York and Erie Railroad, have determined to act promptly in the construction of the railroad to lock with the Niagara Falls road, on the Canada side; a railroad is to be constructed through the peninsula to opposite Detroit. This will be a shorter route to the West than by the New York and Erie Railroad, but it cannot be managed so well as if it were all in the United States. Custom House inspections are disagreeable to travellers.

A number of articles received are awaiting their turn of publication.

KITTLE'S PATENT PLANING MACHINE.---Fig. 1.



This machine is the invention of Robert Kittle, of Dansville, Livingston Co., for which a patent was granted last January. We presented engravings of this machine in Vol. 5, but it is somewhat improved in action since then, and its good qualities have been endorsed by actual operation.

A, figure 1, is the bramah disc or planing wheel, having the pulley, D, upon its shaft, it is driven by the band, C. The stationary spring rim, B, holds the board firmly in its place, while it is being reduced to a thickness by cutters upon the outer circumference of the planing wheel, A. The board is then carried forward by the feed rollers, E, E, and tongued and grooved by the matchers, C C, fig. 1. The matcher heads are driven by a pulley and crank at the end, G, each pulley having a small fly wheel, V, on its shaft to regulate the motion of the matchers. The board then passes under the stationary knife or plane, L, L, which, being caped down as close as an ordinary smoothing plane, takes a thin shaving from the surface of the board, finishing it better than can be done by the Woodworth Machine.

Having every advantage of the stationary knife for finishing the surface, it has not the disadvantages attending all machines that jack the lumber and reduce it to a thickness by stationary planes. The stationary plane, L, L, is raised or lowered by the screws, M, M. It may be dispensed with for planing ordinary flooring, by placing smoothing cutters on the inner circumference of the planing wheel, A.

Figure 2.

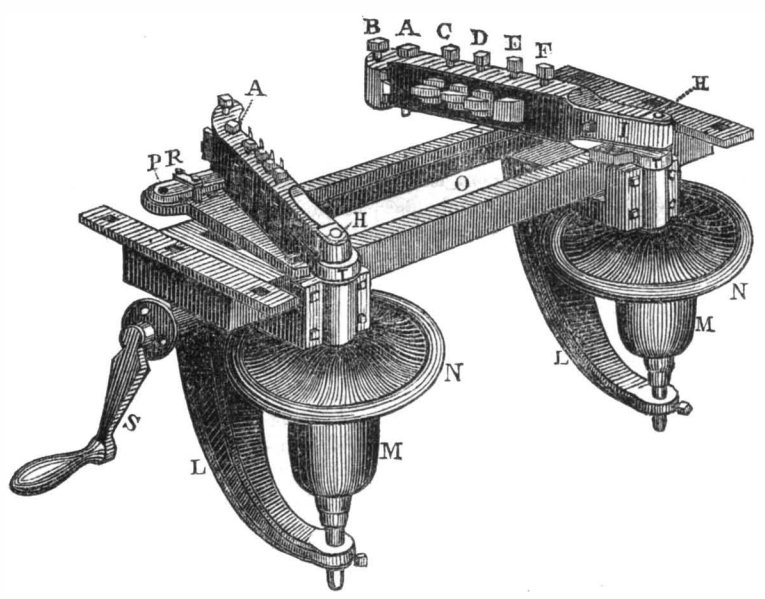


Figure 2 is an enlarged perspective view of the matching cutters, showing how they are arranged and operated. The frame of the matchers is set on the planing frame just forward of the finishing knife, L, (fig. 1.) I I are matcher heads, which are connected at the forward end by half boxes to the crank pins, H H, on the top of the two vertical spindles or shafts of the pulleys, M M. The matcher heads are connected by bolts, A A, to vibrating bars at the back or finishing end. P P (only one seen) are pins which form the centre of the arcs described by the vibrating bars in the course of their action. B C D E F are bolts which secure the matching chisels firmly in the matcher heads. R is a cap (one on each side) which keeps the vibrating bar from being lifted up while in action. N N are fly-wheels on the shafts of the pulleys, M M, to equalize the motion of the matchers; the left-hand matcher head is moved nearer to, or farther from, the right-hand matchers, for boards of different widths by a setting screw, moved by the crank handle, S, which makes the matcher slide across on the frame, O. L L are steps of the frame, the lower ends of which are the boxes of the pulley shafts. The inner end of the matchers at the point A, describes a small arc of a circle, of which P is the centre; the other end is moved in and out in action, by the crank, H, thus giving that end a greater sweep, making the first cutter, secured by the bolt F, cut off a short thick chip, the second at the bolt E a thinner chip, the third, D, still thinner, and the next still more so; while the cutter, B, is set in the opposite direction, and cuts a thin shaving against the feed, and finishes in the most perfect manner as it is moved out and in just far enough to clear itself and take out the shaving. The matching chisels, therefore, move in elipses of the same length, but of different breadths—the one nearest the swinging bar, the centre pin of which is P, being the narrowest.

We have been informed that this machine will do more work with a given power than the Woodworth machine, from the fact that the greater part of the wood cut away is cut in thicker chips and shavings,—(their thickness being graduated according to their distance from the finished surface,) the matchers do the greater part of the work, with the feed and with the grain, having a tendency to close cracks or splits in the board, while it is being matched. The rotary matchers on the contrary work against the feed, cutting against and into the ends of the grain, in a circle from the base of the tongue out to the edge of the board, thereby opening cracks or splits, tearing off slivers, knots, &c. The knives in the planing cylinder work in the same manner against the feed, cutting into the end of the grain in a circle from the finished to the unfinished surface. Each knife, both in the planing cylinder and in the rotary matcher head, doing a portion of the finishing and a portion of the rough work, cutting out through the grit on the surface and edge of the board at each revolution, must require sharpening oftener than the cutters in Kittle's machine, as in his machinethe cutters on the outer circumference of the planing wheel and the first cutter in the matcher head which strikes the board, cuts the grit clean from it, while the cutters which follow work in the clear timber, and do not cut through the grain as often as the rotary cutters.

More information about rights, &c., may be obtained by letters addressed to Mr. Kittle, at Dansville, Livingston Co., N. Y., or to Mr. L. Davis, of the same place, who is assignee of the New England States and Iowa.

A working model of this machine is at the Fair, accompanied by Mr. Kittle and M. Davis, and a full-sized machine is now at work in 22nd street, between Lexington street and the Fourth Avenue, this city, so there is every facility now afforded to transact business and examine the qualities of this machine in this city.

A singular discovery has been made in Madagascar. Fossil eggs of an enormous size have been found in the bed of a torrent. The shells are an eighth of an inch thick, and the circumference of the egg itself is 2 feet 8 inches lengthwise, and 2 feet 2 inches round the middle.

The Atlantic arrived at New York on Wednesday, Oct. 9, unloaded and loaded, and was off on the Saturday following, with 95 passengers—this is quick work for you.

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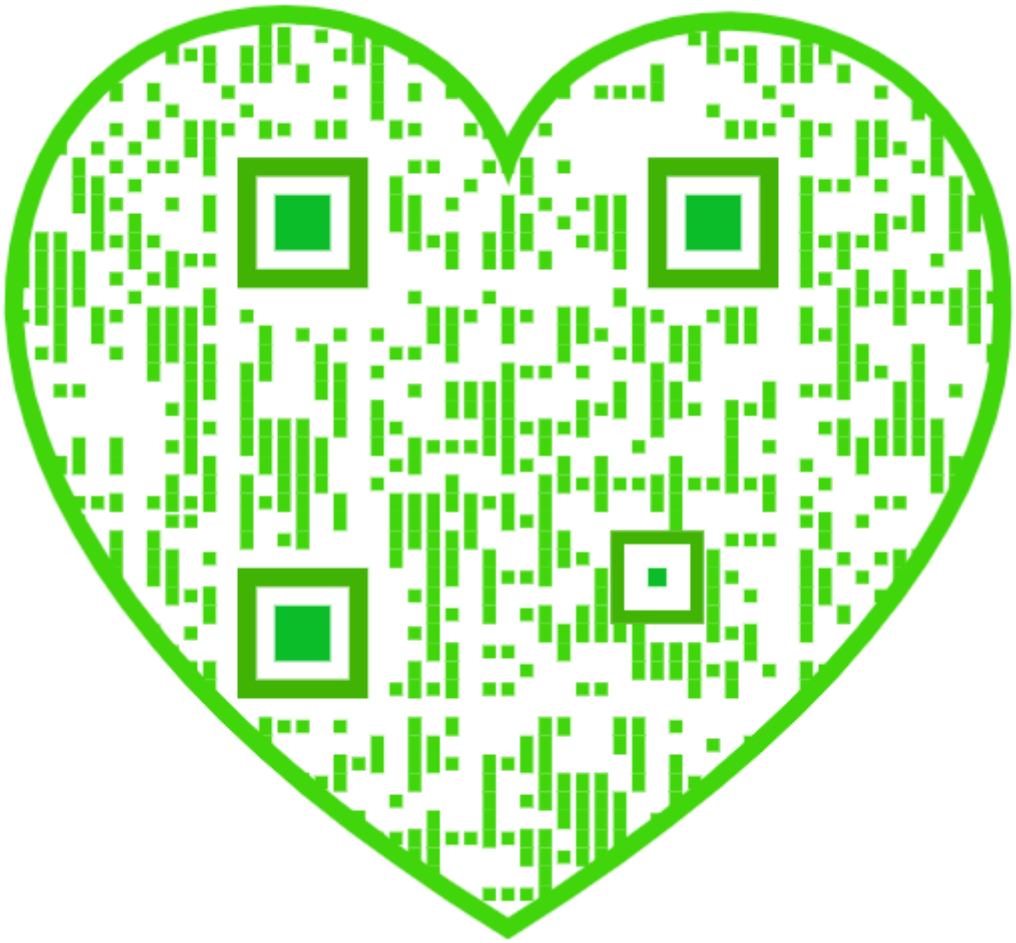

Miscellaneous.

Fair of the American Institute.

Last week we briefly noticed two inventions exhibited at the Fair; both of them are exhibiting on the left hand side of the bridge, on entering Castle Garden. As usual the Bridge is lined on both sides with Agricultural implements, pumps, &c.; there is one good chain pump exhibited, which has its cord made of gutta percha, and its lifting discs of india rubber. The show of articles on the bridge is good, but there is not much that is new. Andrew Meneely, of West Troy, exhibits a full chime of his unrivalled Bells; knowing something about such things, we confidently believe that Mr. Meneely has no superior in the manufacture of bells in the wide world. We have seen and heard some imported bells, which, before they arrived, were to astonish Yankeedom, but upon trial they fell far below Meneely's standard.

STEAM MACHINERY.

At the entrance of the Castle (Old Battery), on the left-hand side, there is to be seen in operation a beautiful invention, illustrated and described in No. 39, Vol. 4, Sci. Am.; it was never exhibited in our city before,—it is the "Self-acting Regulator," for adjusting and maintaining a uniform height of the water in steam boilers; this apparatus is attached to a beautiful small operative engine, and since the first day of its erection, has been always surrounded by an admiring crowd. It is the invention of Warren S. Bartle, of Newark, Wayne Co., N. Y., and was secured by patent last February. There is a small chamber attached to the boiler, to prevent the float from being affected by foam and priming, and this float works a lever, which guides the feed pump, to pump more or less, as is required, and when the float descends to a certain depth it rings a bell and gives warning of the want of water; in the latter case it is only when the reservoir of supply is exhausted, that the float can descend below the appropriate water line.

Opposite to this engine and apparatus is a portable and compact engine, made by Charles F. Mann, of the Fulton Iron Works, Troy, N. Y. This engine has its bed on the top of the boiler horizontally, and the whole is constructed so compactly, and occupies such a small space, as to make it exceedingly suitable for many situations; and we believe, although we are not aware of the price, that it can be furnished very cheap.

In the inside is a splendid large engine, manufactured by Mr. Burdon, Front street, Brooklyn, and he has one employed for propelling the machinery in the machine room, which is finished in superb style. Mr. Burdon's establishment has become famous for the manufacture of engines.

There are a few other engines, but there is nothing peculiarly novel about them, yet we cannot omit mentioning one thing novel in this field, viz., the absence of rotary engines at the Fair. We do not remember of a single previous Fair, in which there was not one or more of such engines. This reminds us of a communication we have on hand about a *great* rotary engine in Missouri, which we shall publish soon.

A NEW THROSTLE FRAME.

The Lowell Machine Shop, Mass., displays the only cotton machinery at the Fair; this is a new Throstle Frame, of splendid workmanship, running at the east end of the machine room; it is termed "McCulley's Patent;" the spindles are not driven by bands, but disc wheels on a horizontal revolving shaft. Each disc acts on a leather washer, which is secured on the bottom of the spindle collars, and thus the spindles are driven with great steadiness and equal regularity of motion—a grand desideratum. We have been informed that there is a saving in the power required to drive the spindles in this manner, of 60 per cent. over the old way: we like the improvement. The price for each spindle is $3.

IRON LATHES.

The Lowell Machine Shop displays the finest lathe at the Fair; it is made for Payne & Co., Corning, N. Y.; we believe that its cost is at least $100 less than it could be built for in New York, it being $775 complete, with the screw cutting attachments—$25 without this. This machine shop exhibits a number of machines, and some fine drawings of machinery, executed by Mr. P. R. Mehlgarten. We were particularly struck with a "Variable Crank Iron Planer," the first ever exhibited, we believe, at the Fair, and, if we mistake not, there is not another like it in this city; it is universal in its application for a machine shop; it can plane iron pulleys as well as if they were turned in a lathe, and it can be arranged to plane bolt heads, bevels, planes, &c.—it is a grand machine; it is totally different from the common planers. The planer is worked by a variable crank, which gives the cutter a reciprocating motion, and makes it act like a fine graving tool. We hope to see this kind of machine universally introduced into our machine shops, within a few years,—all the machinery exhibited by this old shop maintains its high character.

MC'CORMICK'S GRAIN REAPER.

Conspicuous among agricultural implements stands the Grain Reaper of C. H. McCormick, formerly of Virginia, but now of Chicago, Illinois. This reaper was patented quite a number of years ago, and several improvements have been added since. It was patented this year, with its improvements complete, in England. The machine exhibited here is to be forwarded to London, for the Great Industrial Exhibition next year, and after that affair terminates, it is to be presented to Prince Albert.

The employment of these machines has become very common, especially among our Western farmers; no less than 1,800 machines have been sold this year (1850.) They are manufactured by Mr. McCormick, at Chicago, Ill.

WOOD PLANING MACHINES.

There are no less than five of these machines exhibited, viz., Woodworth's, Allen's, Woodbury's, Norcross's, and a model of Robert Kittle's, of Dansville, N. Y. Allen's and Kittle's were illustrated in our last Volume.

We have not much to say about Planing Machines—all these have been exhibited at the Fair before, except Norcross's and Kittle's—Norcross's was patented on the 12th of last February; it employs rotary cutters. Mr. Norcross, (who lives in Lowell,) has got up pamphlets with great care, by some lawyer whose researches into the number of patents granted for planing machines, has been very laborious and extended.

SHINGLE MACHINE.

Among the good and useful machines is Wood's Shingle Machine, patented on the 8th of last January; it cleaves out the shingle, the block being fed into the cutter gate by a motion arbitrary with the motion of the cutter. The feed table changes the angle of the block from side to side every stroke, to present the block to get the right taper cut on the shingle. The cutting knife is moved up and down in a vertical sliding gate, and the block is fed in on a horizontal self-feeding table. Those who may wish to know about the price of this machine, &c., we refer them to our advertising columns.

COCHRAN'S PATENT MACHINE FOR SAWING SHIP TIMBER, &C.

Perhaps the most ingenious machine at the Fair is a working model, exhibiting Mr. Cochran's invention; it is inside under the gallery, at the right-hand side, above the entrance to the machine room and close beside Bruce's rotary and Nevin's reciprocating biscuit cutting machine. This invention has made considerable noise in the world, as many of our readers well know, it having been exhibited a few years ago before the British Board of Admiralty, and Mr. Cochran, as a young American inventor, received great praise. It can cut the knees, ribs or futtocks, all the compass timber, planting, deck plank, &c., with mathematical precision, and with the natural grain of the wood. There are two reciprocating saws in a frame, and these saws are so arranged and combined with machinery as to be moved in their head boxes by set screws, so as to cut out beading and any kind of curved timber whatever. They can be moved to cut on any line, and this with the utmost ease and precision—we having satisfied ourselves not merely by seeing but doing this. It is well known that scarcely two ribs of a ship are alike, consequently no machine can be made with arbitrary motion for cutting them out; that machine, therefore, must be essentially the best which is the most flexible in its changes for every different bevelled rib, yet working all with mathematical exactness. This is the case with this machine; the feed bed can be set to run different bevels of different lengths and different lengths of bevels, and opposite ones, on the same rib, and this gauged correctly to a certainty. No other machine that has ever been erected can do this. These machines were erected at Woolwich, England, in 1847, and were the first and the only ones that ever converted compass timber for a ship's frame into actual use. It has now been in active operation for several years, and we have seen old Admiral Cochrane's certificate highly endorsing more than we have said about the good qualities of this American invention. We say this much, because we believe the old Admiral to be one of the most ingenious men in the world—one well qualified to judge. As this machine has been the subject of no small amount of public comment, we will take the opportunity at some other period to notice it at greater length.

AMERICAN CUTLERY.

Among the many things in the Rotunda, which attracted our attention, was a splendid case of cutlery, manufactured by the Waterville Co., at Waterbury, Conn. It is but a few years since almost all our cutlery was imported, but now we not only supply ourselves with what might be termed good enough articles for home consumption, but those articles rival, if not excel, any made abroad, and would vie with the productions of Sheffield, if sent to the Industrial Exhibition. Mr. F. G. Wheeler, No. 7 Gold st., New York, is Agent.

ALBANY ARGILLO.

The Albany Argillo Works display some of the most beautiful specimens of this beautiful manufacture that we have ever seen; they rival the natural stone in every respect. For door knobs they are beautiful, and also for table slabs. No one visiting the Fair should neglect to examine this beautiful material.

LIGHT CARRIAGES.

There are some light carriages of beautiful workmanship, a novel one being made by Joseph Hyde, of Troy; it is a tubular metal carriage; the axles, spokes of the wheels, shafts, &c., are metal tubes,—it therefore combines great strength with a very airy and neat appearance. The other carriages exhibited do credit to their makers. These carriages are at the right-hand side from the entrance, in the Rotunda.

ABBOTT'S HOROMETER.

This is a small instrument among the philosophical class, and it is liable to be overlooked; indeed, we venture to say that it has not been observed with the least attention by one-thousandth part of the visitors. It is the invention of Mr. Amos Abbott, of Manchester, N. H., who invented it while on a voyage from the East Indies, where he lived for a number of years as a teacher. It is an instrument comprising a section of our globe, divided into degrees of latitude and longitude, and affords, by lines and the measurement of the degrees by a plummet, a way to find out the time of day, sunrise, and latitude, and is useful for measuring heights and distances.

A NEW CHRONOMETER—CRANE'S ANNUAL CLOCK.

Mr. A. D. Crane exhibits a clock which requires to be wound up only once a year. It also gives by simple inspection the time of day, the days of the month during the whole year, the rising and the setting of the sun and moon for any latitude, the phases of the moon, and the time of the sun and moon entering the signs, high and low tide, &c. This clock is also so improved as to compensate for differences of the motive power, and is calculated to be *isochronal*, the absence of which property in time keepers has formerly been a very serious difficulty.

The inventor has also made an improvement, in the common Yankee clock, by which many parts are done away with, and their quality as time-keepers improved, while the price of a good brass clock will be lessened to one dollar.

Mr. Crane lives at Newark, N. J. What a change has taken place in the past ten years, in respect to the price of clocks; about fifteen years ago, the price of a common wooden Yankee clock was $10. Much neater clocks can now be bought for $3 and soon, for $1. Well, we hope it's all for the good of the trade.

AMERICAN ZINC.

Some splendid samples of New Jersey Zinc Ore and manufactured Zinc, are exhibited. The white oxide of zinc, for painting, is a beautiful material, which, along with the manufacture of the metal, must make the Jersey mines very valuable both to the owners and our country. This oxide mixes with oil to make various colored paints. It is but a week since we saw an extract from a French paper, stating that this paint should be used for all kinds of painting.

DAGUERREOTYPES.

Considerable space in the gallery is devoted to the exhibition of Daguerreotype pictures, as usual. We have generally paid attention to the quality of the specimens, and, without wishing to disparage our city artists, we feel compelled to give the preference to the Messrs. Roots', of Philadelphia, and Mr. Gavitt's, of Albany. We last year paid a high compliment to the skill of Messrs. Roots, and we are pleased to notice, by a card, that they have opened a splendid gallery in this city, at No. 363 Broadway, corner of Franklin. If any of our friends desire a perfect semblance of themselves, and a picture finished in the highest style of the art, we can assure them that they can obtain it at the above place.

The Catalogues of the American Institute almost amount to an imposition, in consequence of the careless and incorrect manner in which they were printed. It would seem to us that no attention at all was paid to comparing the proof-sheets with the entry book of the Institute, or so many mistakes would not have occurred; for instance No. 1871 calls for a set of Turner's Machines, by A. W. Whiting,—it should read a set of Tinman's Machines, by A. W. Whitney. S. H. Wales, of this city, enters a Sub-soil Plow, but it is put down as S. H. Waters. We might instance several others; complaints have been made to us in regard to these blunders, and we hope for the future, that the publishers will be more careful, as very often persons visiting the Fair, and noticing an article which they might wish to purchase, by taking the directions from the catalogue they would fail of getting the proper address.

Next week we will continue our remarks on the articles in the Fair.

The Wheeling Bridge Case.

Chancellor Walworth closed his sitttings at the Irving House, in this case, on Saturday last, after three weeks' continual examination of witnesses. Testimony is to be taken elsewhere, and it is said by scientific men here, that the information collected in the case will be of immense importance to the steam navigation of the country. The counsel for the parties at the Irving House were for the State of Pennsylvania, Hon. Robert J. Walker and George Harding, and for the Wheeling Bridge, B. W. Russell and William W. Hubbell, Esqs.

The New York Academy of Medicine have petitioned the President to remove the present Inspector of Drugs, at this port, stating as a reason, his incompetency.

Above all things, we detest that spirit which preaches up liberty and practices tyranny:—we see that some shoemakers in Newark, N. J., have been abusing a fellow workman who would not join a Trades' Association.

The Boston folks have had a flare-up about Jenny Lind's last concert. They accuse Barnum of having sold more tickets than there were seats. *He* denies this statement, we guess he is right.

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For the Scientific American.

The Voltaic Battery.

NUMBER III.—(Concluded.)

As it is now to be premised that it is understood what is necessary to form a battery, and also what the nature of the parts must be, we shall consider the cause of the decline of the battery action, and also what is necessary to sustain the action. At a first view it is only necessary to sustain those conditions which constitute the battery to continue it in action, but we will first recite those conditions and then observe how these conditions are changed by the continued action of the instrument by which we may more clearly see the cause of the declination, and know what is requisite to continued action.

In the first number we defined a battery as an apparatus, consisting of a compound fluid, and two other bodies, one of which is to eliminate one element of the compound fluid, and the other body the other element. Intensity was defined as the measure of the force of the chemical action, and quantity as the amount of the chemical action. All declinations of the battery are the decline of quantity and intensity—or, in other words, of the amount and force of the chemical action. As the intensity which results from any one chemical force, is always the same; the intensity of Smee's battery is constant—but in Grove's battery the chemical actions are constantly changing, for the hydrogen will be decomposing nitric acid at one time, and nitrous acid at another —the intensity will be ever varying.

In all useful batteries, one of the decomposing bodies is zinc, and its relation to the whole apparatus is such that it is called the Electromotor, but zinc is by far the most effective and economical, and therefore we will not consider the substitution of any thing in its place. As the zinc is the electromotor, it is evident that our battery cannot work without zinc, and that any diminution of the surface exposed to chemical action will cause a decrease of quantity. The eyes of the operator will instruct him when the battery declines from this cause.

But the oxide of zinc must be converted into sulphate by combining with acid, and the sulphate must be dissolved by the water. It will be evident that the rapidity with which these actions are performed, will depend on the percentage of acid and the readiness of the water to dissolve the sulphate. Hot water will readily effect the solution, while cold water is more tardy, and when the temperature is near freezing, the solution is scarcely effected at all; therefore, if we want the battery to work, we must keep it warm: in general every thirty degrees above freezing will double the quantity. As the water can dissolve only a certain quantity of the sulphate, the battery may decline and stop altogether for want of water, although there may be abundance of sulphuric acid in the vessel. To obviate this, the prudent operator will never add more acid altogether, to the water, than one-fourth of its bulk, and for large operations it should never exceed one-sixth, for as the water approaches the point of saturation, the solution of the sulphate is effected more and more slowly, and the excess of acid is wasted. To test whether acid is wanted in the battery, or whether it has all combined with the oxide of zinc, a small battery, consisting of a mere strip of silver and zinc soldered above, is thrust into the liquid: the operator judges of the amount of acid by the rapidity of the evolution of gas from the silver strip. What has been said about the conditions of the battery as the zinc and its solvents, will apply to all the batteries for zinc is the electromotor in all of them.

We now come to the second body of the battery, or that one which eleminates the hydrogen. First, we will examine it in Smee's instrument:—Silver is generally used for this part, but other metals will answer to evolve the hydrogen, and of all the metals, iron possesses the property in the most eminent degree. We saw, in a former number, that a peculiar form of surface was requisite for evolving hydrogen, and this form is readily given to iron, but unfortunately the water will act on the iron, and in a few moments the surface is not a surface of iron, but a surface of oxide of iron, and the acid and water will soon eat up the iron plate. This explains how it is that every now and then somebody will discover that iron can be used in the place of silver or platinum, in making batteries, and then we hear no more of it until it is discovered again.

What was said above about iron will apply to all the ignoble metals, as they all become, in a short time, covered with a coating of oxide, and a surface of oxide will not evolve the hydrogen. Here the operator can see the importance of keeping all ignoble metal away from the acid of the battery; although we may use platinum or silver, if ever so small a portion of the brass or copper fixtures is exposed to the acid of the battery, it will be dissolved, and be precipitated as metal or oxide on the silver plate, and render it inert. One of the greatest annoyances the operator has to bear arises from the metals, as iron, &c., with which the zinc is contaminated; as the zinc plate is dissolved, these impurities are gradually precipitated on the silver and hinder its action. From this cause it is generally thought that the platinization of Smee's battery will last only a few weeks; such, however, is not the case, as it lasts for years; but acids will not remove the impurities from the surface: after years of trouble, I discovered that by immersing the plates for a few hours in a weak solution of per-chloride of iron, it will be restored to its action.

VOLTA.

For the Scientific American.

Sub-Marine Telegraph under the Atlantic.

Since the successful attempt to connect England and France, by means of a sub-marine Telegraph, the great question of uniting England, or rather Ireland and America, has been the theme of conversation in various circles, and many sage opinions expressed in regard to its feasibility or possibility. Some speak of the breaking of the wire with an air of triumph, indicative of something more than doubt in regard to the ultimate success of the scheme. We here propose to show in a simple and practical manner how this great and most important undertaking can be successfully carried out. One reason of the failure of the "channel line," was the too small size of the wire, and another was the want of a sufficient number of anchors to hold the wire steady in its position along a rocky bed. There were but sixteen anchors to the mile—when there should have been small anchors of five pounds once in five or six feet, so that the currents or other action, could have no sensible chafing effect upon the wire, which should have been one inch and a half in diameter at least—instead of five-eighths of an inch, as in this instance. A novel and ingenious plan for coating four separate wires in a solid Gutta Percha cord, one and three-fourths of an inch in diameter has been invented.

It is proposed to anchor the wire, when the bed of the ocean will allow of sufficient observation to know its character, once in five, ten and fifteen feet, until deep water is found, when there will be just sufficient weight to overcome the specific gravity of the water, when the line will be run out and permitted to sink, as it surely will, to the bottom, where there is neither life or motion to disturb or injure it. The distance between Cape Clear near Galway, in Ireland, is about 1,600 miles along the banks of Newfoundland, commencing about 100 miles above Halifax, and a line of this length consisting of four separate wires perfectly insulated, in a cord of the size proposed, would last for hundreds of years, as its lateral strength would be almost equal to iron. Such a line would weigh about 8,000 tons, and would require six hundred anchors. The cost of everything, when in complete working order, would be less than 3,000,000 of dollars.

The lines should be in the hands of the governments of the two countries where it terminates, who should agree on a tariff of prices for messages, which should be free to all who chose to pay the rates. In this way much of the uncertainty attendant upon commercial operations, would be avoided. In laying down the line, 15 ships of 1,000 tons would be required, with at least 4 steamers of 1,500 tons, and 2 fast steamers as tenders. The time required to lay down the wire when every thing was on board and the vessels at their stations on the American and Irish coasts would be from 12 to 20 days only, as the ships would lay the line toward the centre from the land, meeting as near midway the ocean as possible.

The line would be sunk below all anchorage, and below all action of the water, and properly protected by lead or sheet copper coating where the bed was rocky and uneven. By the use of "St. John's self-determining variation compass," the wire could be laid down on an exact line, as this admirable instrument tells with unerring certainty by simple inspection, the deviation from the true geographical meridian, without reference to observations, so that all difficulty in locating and finding the wire in case of accident, is provided for by this, the most important invention of this inventive age. Ships using this compass will save time and ensure positive certainty in the safety and regularity of their trips.

Efforts will be made to induce the early action of the government in this important matter. Capitalists stand ready to construct the line for three millions of dollars with sufficient guarantees for faithful performance of contract, and all that remains is for the government to appropriate that sum and the work will be completed in less than two years.

Proposals have been made by S. T. Armstrong, Esq., of this city, to construct a line of Sub-marine Telegraph between England and Ireland on the plan above alluded to. Should he be successful in this, he will soon make proposals in due form to capitalists and to the government to lay down the Atlantic Line, a measure that will regenerate Ireland.

H. L. STUART, Civil Engineer.

British Patent Laws.

It has always been one of the leading objects of the British Scientific Association, and it is now the only one of them which has not been wholly accomplished, to obtain a more general attention to the objects of science, and a removal of any disadvantages of a public kind which impede it progress. Although this object is not very definitely expressed, yet Mr. Harcourt, in moving its adoption, included under it the revision of the Law of Patents and the direct national encouragement of science, two subjects to which I shall briefly direct your attention. In 1831, when the association commenced its labors, our patent laws were a blot on the legislation of Great Britain, and though some of their more obnoxious provisions have, since that time, been modified or removed, they are a blot still, less deep in its dye, but equally a stain upon the character of the nation. The protection, which is given by statute to every other property in literature and the fine arts, is not accorded to property in scientific inventions and discoveries. A man of genius completes an invention, and after incurring great expense, and spending years of anxiety and labor, he is ready to give the benefit of it to the public. Perhaps it is an invention to save life—the life-boat; to shorten space and lengthen time—the railway; to guide the commerce of the world through the trackless ocean—the mariner's compass: to extend the industry, increase the power, and fill the coffers of the state—the steam-engine; to civilize our species, to raise it from the depths of ignorance and crime to knowledge and to virtue—the printing-press. But whatever it may be, a greatful country has granted to the inventor the sole benefit of its use for 14 years. But what the statute thus freely gives, law and custom as freely take away, or render void. Fees, varying frem 200*l* to 500*l*, are demanded from the inventor; and the gift thus so highly estimated by the giver, bears the great seal of England. The inventor must describe his invention with legal precision. If he errs in the slightest point—if his description is not sufficiently intelligible—if the smallest portion of his invention has been used before—or if he has incautiously allowed his secret to be made known to two, or even to one individual, he will lose in a court of law his money and his privilege. Should his patent escape unscathed from the fiery ordeal, it oftens happens that the patentee has not been remunerated during the fourteen years of his term. In this case the state is willing to extend his right for five or seven years more; but he can obtain this extension only by the expensive and uncertain process of an act of Parliament; a boon which is seldom asked, and which, through rival influence, has often been withheld

Such was the patent law twenty years ago; but since that time it has received some importante ameliorations; and though the British Association did not interfere as a body, yet some of its members applied energetically on the subject to some of the more influential individuals in Lord Grey's Government, and the result of this was, two acts of Parliament passed in 1835 and 1839, entitled "Acts for amending the law touching letters-patent for inventions." Without referring to another important act for registering designs, which had the effect of withdrawing from the grasp of the patent laws a great number of useful inventions, depending principally on form, I shall notice only the valuable provisions of the two acts above mentioned, acts which we owe solely to Lord Brougham. By the first of these acts the patentee is permitted to disclaim any part either of the title of his invention or of the specification of it, or to make any alteration on the title or specification. The same act gives the Privy Council the power of confirming any patent, or of granting a new one when a patent had been taken out for an invention which the patentee believed to be new, but which was found to have been known before, but not publicly and generally used. By the same act, too, the power of letters patent was taken from Parliament, and given to the Privy Council, who have on different occasions exercised it with judgment and discrimination. By the 2d act of 1839 this last privilege was made more attainable by the patentee.

[The above is from Sir David Brewster's address before the British Association for the Advancement of Science; it shows how the great men of that country—the men of science—are interested in the protection of the inventor's rights. A great reform is yet wanted in the British Patent Laws—the fees are too high; they should be reduced nearly to the American standard, yet not quite so low, because a patent is far easier protected there than with us; and another thing, the applicant does not meet opponents in the British Patent Office as he meets oftentimes in the Corps of our Patent Office. When application is made for a patent in London, notice is sent to all those who have patents for inventions of a similar title, and if they show no opposition, the patent is at once issued; if they oppose, evidence is at once taken to prove the correctness of the opposition, and the legality of the applicant's invention is settled at the very threshhold of action. In our Patent Office, objections to the claims of the applicant are often set up by the examiner, and before the applicant can appeal from an unrighteous decision, he must deposit $45; and if he gains the case, is the money returned? No, it must remain in the Patent Office Fund, as a bonus to injustice. This part of our Patent Law certainly demands a reform, as was set forth by our correspondent "Junius Redivivus," last week.

Australian Cotton.

From a series of experiments in the Maitland District some satisfactory results have been obtained. The staple is described as very white, remarkably elastic, of sound strong fibre, long and finer than the good average American cotton imported into Liverpool. At the present time, now that so many of our mills are at a stand for want of the raw material, the cotton experiment in Australia is worthy of public attention. The kinds experimented on have been confined to Bourbon and Sea Island seed, and the success of the trial appears to have satisfied many of the leading colonists that the climate of the colony is extremely congenial to the cotton tree.

The British are making strong efforts, at present, to supply themselves with cotton,—time will show with what success.

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New Inventions.

Electro Magnetic Engine.--Letter from Prof. Page.

WASHINGTON, D. C., Oct. 12, 1850.

MESSRS. EDITORS—The conclusion of an article in your paper of to-day, upon the subject of Electro Magnetism as a motive power, reads thus, "honor to whom honor is due." The same article speaks of Mr. Davenport as having made the first electro-magnetic engine in the world. In pursuance of your commendable spirit and motto, I beg leave to call your attention to the following facts:—The first electro-magnetic engine in the world was invented, and I believe made, by Prof. Henry, Sec'y Smithsonian Institution, and published in Silliman's Journal in 1831. In 1832 and 1833, several large engines were made in Europe by Prof. Dal Negro, Prof. M. De Botto, and by Dr. Schultless, accounts of which are given in scientific journals. The first rotary engine made in this country was invented by Dr. Edmonson, of Baltimore, and published by him in Silliman's Journal in 1834; this engine was upon quite a large scale. It was after this publication that Mr. Davenport first turned his attention to the subject, although there is no doubt but Mr. Davenport's invention was original with himself; and considering his circumstances at that time, it reflects great credit upon his genius and perseverance. I forgot, also, to mention that Mr. Sturgeon, of England, invented several electro-magnetic engines in 1832, with which he worked miniature pumps, saw mills, &c. I will only add that, so far as I can learn from any publication, record or evidence of any sort, the peculiar principle of my present engines was first adopted by myself, and some time after by Mr. Davenport. His earlier experiments in this way appear, from his account, to have exceeded mine in magnitude, and this must have been expected from the extensive means and facilities he then enjoyed. Respectfully,

CHAS. G. PAGE.

(To Prof. Page's letter we also say, "honor to whom honor is due;" we have no desire to ruffle a single honor which belongs to any inventor—our object is truth, and Prof. Page's honor, as an inventor, is as sacred to us, as Mr. Davenport's.

Another Coal Locomotive.

Another coal locomotive, says the Pottsville Mining Register, has been invented by Wm. Dibble, something like that of Mr. Dimpfel which we described lately, but in our judgment an improvement. It is clear enough that all the objections hitherto existing will, by either of these engines, be removed; and we now rely upon the general use of our anthracite in land and marine engines, in preference to all other fuels. We may mention that Collins' Liverpool Steamers are so far dissatisfied with the Cumberland bituminous coal, as to use a great proportion of anthracite now, with a probability of soon using it altogether.

Improvement in Seraphines.

Messrs. Jones & Burdett, of Brattlebero', Vt., have invented two new and useful improvements on Seraphines, for which they have taken measures to secure a patent. The improvements consist in combining the wind-chest with the foundation, having the bellows inside, and the sounding board outside, below. This arrangement gives the instrument greater brilliancy and clearness of tone; for, by having the sounding board inside, as in old instruments, the sound is greatly smothered, and of course inferior to the new arrangement.

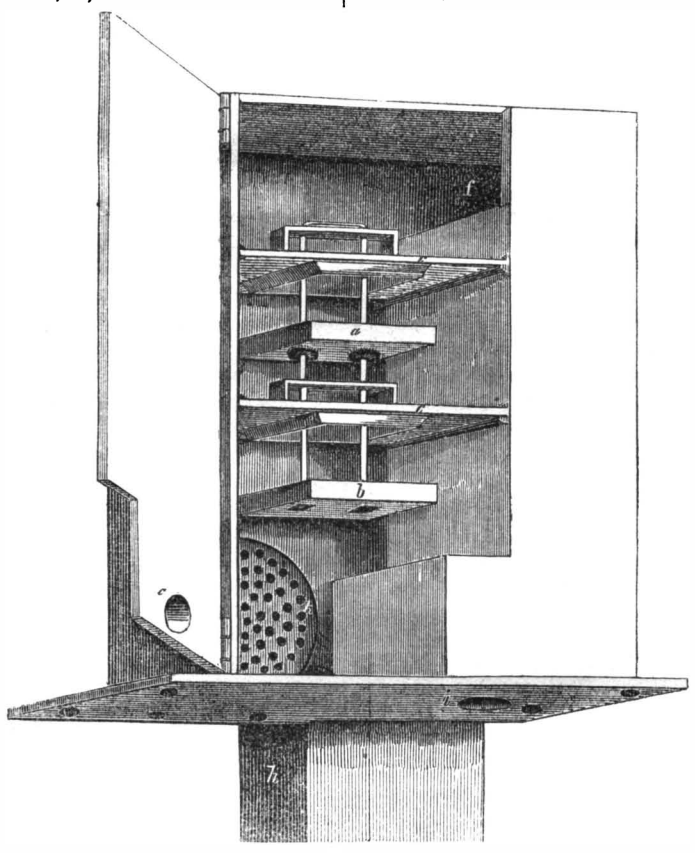
Pavements in Boston.

We have received a letter from Mr. Nicholson, the inventor of the pavement in Boston, mentioned in No. 2, Scientific American, this Volume, wherein he states that he caused a short section of the Western Avenue, Beacon street, to be paved with two modifications of his invention, in July, 1848, (not ten years ago, as mentioned in the article referred to,) it has, therefore, been in use over two years, and although it was intentionally composed of inferior materials, yet it deserves and receives general commendation.

ROBINSON'S PATENT SHIP VENTILATOR.

This apparatus is the invention of Warren Robinson, of New Haven, Conn., and a patent was granted for it a few weeks ago. This engraving is a perspective view of the Ventilating Chamber, with part of the back thrown open to show its internal arrangement. It is located in the bulwarks, but is independent of them, being bolted to the plankshеer. *k* is a perforated plate or register to admit the air, which passes through the openings in the plates, *c c*, to the passage, *f*, and is thence conveyed through this passage to the cabins by the air-duct, *h*, which is extended to the floor, and communicates with the cabin by a register. For a discharge of the vitiated air, a like chamber is used with the air-duct, *h*, terminating at the ceiling by a register, the same as the former one. A communication with the timbers is effected through the opening, *i*, which communicates with a like opening through the plankshеer, by which means constant ventilation is afforded the timbers without any detriment to its capacity for ventilating the cabins.

When a sea comes in board, and enters the register, *k*, it is carried off by the pipe, *c*, or in

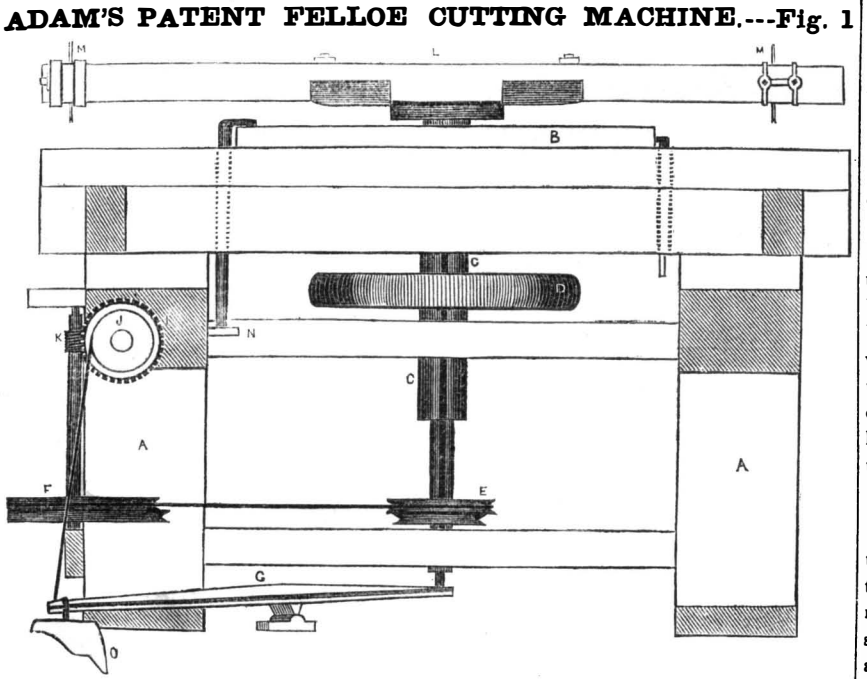


ising carries up the puppet valves, *a b*, which are of cork, on its surface, and closes the openings in the plates, *c c*, thus preventing the water reaching the passage, *f*, the only opening to the cabins. As soon as the water subsides, the valves fall to the position shown in the cut, by their own gravity. The valve, *b*, is secured to the suspending rods, carrying them and its duplicate valve in its motions. The duplicate valve, *a*, rests upon the collars and slides on the rods independently of the other; so that, should any obstruction by a foreign body prevent the lower valve from closing tight, the valve, *a*, would accomplish the object.

For ventilating the cabins and timbers of vessels; for securing the health and comfort of passengers; for saving thousands of dollars in cargo, and for preventing the premature decay of those vessels to which it is applied, by affording certain ventilation under the most adverse circumstances, even when the shipped seas are constant, and all other, but less effective, means of ventilation usually resorted to under ordinary circumstances are of no avail, then its transcendent qualities are so self-evident, that viewed in the light of honest truth, it is at once pronounced to be, as it really is, the desideratum of the age.

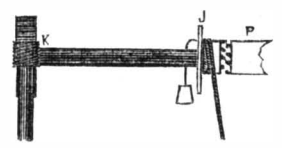
Those who desire to obtain more information about this excellent invention, such as the purchase of rights, &c., can obtain it by letters addressed (*p. p.*), to Mr. Robinson, William street, New Haven, Conn.

ADAM'S PATENT FELLOE CUTTING MACHINE.---Fig. 1



This is a representation of J. & L. Adams' improved machine for Cutting Felloes for Wheels. In Volume 4 we illustrated a felloe machine of the Messrs. Adams, as belonging to his first patent; but the above, if any of our readers will take the trouble to make the comparison, is almost a different machine, it is so improved; and as improved, patented. Figure 1 is a front elevation, showing all the parts, so as to give a correct idea of its construction and operation. Figure 2 is a section, showing the clutch which throws the step of the cutter shaft out and in gear, to elevate and depress the cutters. The same

FIG. 2.



letters refer to like parts. A A represent the sides of the frame. B is an oak plank on the table, it is held between jaws, which extend down under the bench, as shown by the dotted lines; L L are two arms, they are secured on the top of a revolving vertical shaft, C. M M are the cutters or knives for cutting out the felloe; the one is set farther out than the other—the distance of the width of the felloe to be cut, and, as the arms revolve, the one knife cuts the outer and the other the inner circle. These knives can be shifted on the arms to cut felloes for wheels of a greater or less diameter. As these cutters must descend to cut down the thickness of the plank, the vertical shaft, C, is made to rise and fall as follows:—the lower end of said shaft is secured on the end of a step, G, which is nothing but a weighted balance lever, O being the weight at its other end, to allow the weight to be raised to lower the shaft, C, and *vice versa*; this is done by a cord or rope extending from the weighted end over a roller, J, on the cross shaft; on this shaft is a gear wheel, to gear into a worm, K, on the upright or vertical spindle. There is a clutch, P, on the inside of the roller shaft, J, and a handle outside throws the feed out and in gear. The worm shaft is the feed, a band from pulley E to pulley F gives motion to the worm, K, which turns the gear wheel, and thus winds the rope from the weighted end of the lever, G, around the roller, J, thus elevating the weight, O, consequently depressing the other end of the lever, G, lowering the shaft, C, and gradually bringing down the cutters, as the felloe is being cut out. When the felloe is cut, by throwing the pulley, F, out of gear with the roller, J, by means of the clutch (P, fig. 2) and the handle spoken of, the weight, O, at once drops down and the cutter shaft, with the cutters, rise up above the table; D is the driving band pulley. The whole machinery is exceedingly simple, and its operative qualities are excellent: we timed its operation as it was at work at the Fair, now in Castle Garden, and found that it could cut out sixty good felloes easily in an hour. This machine has taken not a few prizes at Fairs. It is going from New York to the Fair of the Mechanic's Institute, at Baltimore.

Messrs. J. & L. Adams reside at Amherst, Mass.

Sewell's Marine Salinometer.

We have had the pleasure of seeing one of Sewell's Marine Salinometers, since we noticed them, as copied from a cotemporary, two weeks ago. We have also seen drawings and a description of the same, as published in a pamphlet by Mr. Sewell, in which are a number of certificates from highly respected engineers (some of whom we know,) which speak highly of its merits. Salinometers have been in use for a number of years,—one is described by Scott Russell, as invented by him in 1842, but it is not as simple as that of Mr. Sewell, who is an Engineer in the U.S.N. Mr. Pike, in this city, makes the instruments, and at some other time we shall take the opportunity of illustrating and describing it, besides one or two others.

Proof of Excellence.

A Parisian writer, in a eulogy on Balzac, the distinguished French novelist, says, "as the greatest proof of his excellence as an author may be mentioned the distinction which he shared with the great Moliere; he was refused admittance to the Academie." This reminds one of Piron's celebrated epitaph on himself: "Here lies Piron, who was nothing—not even an Academician!"—It is no sign of ability to have D. D., L.L.D., C.E., F.R.S., Prof., Hon., or Gen. attached to a name.

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Scientific American

NEW YORK, OCTOBER 19, 1850.

Hints to Inventors and Patentees.

A correspondent asks three questions, which we will answer for his benefit and that of others. One is, "the best way of introducing inventions;" another is, "the selling of an invention before it is patented;" the other we give in his own words:—"Suppose a patentee sells the right to make and vend in the town of A, can the purchaser send the articles made under such contract into the town of B, there to be sold? Suppose a stranger calls on the purchaser residing in A, and buys a large quantity of the articles, may not the last purchaser sell where he pleases? if so, is not the sale of a right to make and vend in the town of A about equivalent to selling a right to make and vend any where? If so, where is the remedy, and what form should be the contract to guard against so extensive a use of what was intended to be a very limited grant?"

We will answer the last first. What does the law say? "Making, vending and using:" these are the rights of a patentee. Can any man, then, sell or use a patented machins or article in any place in the United States, without the consent of a patentee, or his assignee? No. The purchaser of the town of A may send his articles into B, to be sold, but if we owned the town of B, we should like to catch the fellow's agent from A selling on our beat, and A himself would not steer clear. Any person using a patented article, without the consent of the patentee, is liable to an action for using it. Every assignee of a patent has the exclusive right of it in the district which he has legally purchased. The assignee of the town of A is liable to an action if he sends articles to be sold into the town of B, which belongs to another assignee, and no one from the town of B can purchase in the town of A, and bring home the article to B and use it. Every assignee is sole proprietor of making, using, and selling his patented article in the town, State, or district of which he is assignee. No one in his district, &c., can make, use and sell the patented article without his consent. A grantee can bring an action and sue in a particular district in his own name. "A party may be held responsible for using, who gives to others to be consumed, the article that is the subject of a patent." It would be very curious justice, indeed, if the owner of the patent for the town of B, had his machinery burned down, when supplying a demand of 100 per week, if the owner of A could send over and supply his customers without being responsible.

No patent is held to be invalid by reason of the use or sale of the machine, &c., for two years prior to its being patented. No patentee can stop the use of a machine, if it has been in operation before he applied for a patent. All inventors ought to be aware of this fact, and make application for their patents as soon as possible. A caveat is not an application for a patent.

We know of no better way for a patentee to introduce his invention than by publishing a description of it in the Scientific American. Every man should push his invention into notice in every possible respectable way.

This answers the three questions of one correspondent, and in answering him we have done the same service to a number of others.

Virginia Cannel Coal.

We have examined a sample of the Virginia Cannel Coal, from the mines of Col. Wm. M. Peyton, on Coal River, Va. Having a knowledge of various kinds of coal, and having visited many of the mines in Britain and examined specimens of the Cannel Coal there, we have no hesitancy in saying that we are fully convinced that the Virginia coal is equal, if not superior to any of the foreign kind that we have ever seen. We have been informed that the supply is inexhaustible, and that parties in New York have purchased some of the property, with the ulterior object in view of supplying this city.

Cannel Coal is very different from the common anthracite or bituminous,—it burns with a clean, clear flame, and is the best coal for making gas; this is owing to the absence of nitrogen in it, hence there is no ammonia. In the making of coal gas, it is of the first importance, to ascertain the composition of the coal,—if it contains iron pyrites it is not good, for it will produce sulphuretted hydrogen; if it contains nitrogen, it will produce ammonia; these are not only deleterious gases, but they also injure the brightness of the light, hence they must be separated from the gas to be burned (carburetted hydrogen) before it can be used. A pure coal produces better and cheaper gas, because it does not entail the same expense in the manufacture. The analysis of pure Cannel Coal is—Carbon, 87·27; Hydrogen, 7·88; Oxygen, 4·85—100. We can thus see the importance of the Virginia Cannel Coal in the manufacture of gas. To burn in grates, it does not give out the same amount of heat as the anthracite, or common bituminous coal, but a piece of it in a grate nearly answers all the purposes of candles or lamps. In some of the rural districts of Britain, contiguous to the Cannel Coal beds, the poor people employ a lump of the coal for a lamp or a candle: a piece is placed on the fire, and it soon bursts out into a beautiful clear light, of a very pure flame. It was at such a fire as this, we suppose, where the great engineer, Telford, learned his first lessons, and described his own youthful efforts in the following lines,

"Take notice of the sober lad,
All in the homely homespun clad,
Who by the ingle hangs his head,
And begs of neighbors books to read.

Heating of Railroad Cars.

Steam would afford a more agreeable warmth, and would be more evenly distributed through our passenger cars, than heat from stoves, as now arranged. The cars could be warmed by means of pipes passing through them, or by steam passing through a double flooring, or by having lined sides to the cars; and it could be let in or shut off, as required, for an agreeable temperature in the cars. In case of accidents, the bad effects of the overturning of stoves would be avoided, also the injury to health from exposure to open doors or windows, that is sometimes necessary, owing to the overheating of stoves. The pipes from the engine to the cars, and between the cars, could be screwed together quickly, and there should be a stop-cock for each car, to be used when any one has to be detached. The pipes might have sliding joints between the cars, suited to the play or variable distance of the cars; or, perhaps, gutta percha pipes, or hose, would answer between the cars. If the heat would not operate injuriously upon them, such hose would be best, perhaps, for connecting pipes.

Boston, 1850. P.

[Count Rumford, we believe, was the first person who introduced steam for heating buildings. The heating of railroad cars by steam has been proposed to us before. In Voume 2 there is an illustrated description of heating cars by hot air, through pipes from the fire-box of the locomotive. The plan was invented by Mr. Townsend, of Albany: it contains all the essential features of the plan suggested above, only hot air, not steam, was to be employed. The steamship Asia has her saloon heated by steam pipes from the boilers, but although this does well for a steamboat, we see great difficulties in the employment of it to heat cars. The steam to be raised would be so much more work for the boiler and engineer, and the pipes would have to be of the best material, for they would have to stand the same pressure, nearly, as the boiler. If accidents from the overturning of stoves would be removed, another class would be added, viz., those from the bursting of pipes. The heating of cars by floor or side casing, is out of the question. Gutta percha would not answer, it cannot stand the heat; it is not good for belting, nor anything else in hot situations. Some horse harness made of it in London, stretched so beautifully, that it enabled the ponies to walk a hundred yards ahead of their drivers. Our correspondent is perfectly correct in suggesting the employment of steam as the *best* means of heating the cars—it is the best—but the difficulties in the way of its application to railroad cars are so great that we, at present, cannot see any way whereby it can be economically employed.

The Sea Serpent.

Our opinion in regard to this marine prodigy is solicited by a lady subscriber, residing in Alabama. Hitherto we have been very skeptical as to the existence of these monsters, and, as yet, we have no positive or satisfactory knowledge concerning them.

There has been much respectable testimony brought forward to remove all doubt upon the subject, yet it is singular enough that no one connected with the department of Zoological science has ever seen one, nor is there any bones or fragments among any of the collections, in Europe or America.

In the year 1734 the Rev. Mr. Edege, a gentleman of high character at that time as a spiritual teacher, represents that he saw one of these monsters, and gives a faithful account of its appearance, which, in many important particulars, corresponds with the sketch taken of one seen from the English ship Plumper, Dec. 31st, 1848, latitude 41° N., longitude 12° 31′ W.; it was calculated as being about twenty feet long, black, sharp head, six or eight feet long—moved slow in the water, and had a mane, or something resembling it, on its back. The officers and crew of this vessel saw it, but it disappeared before any of the passengers on board could command a view. Dr. Newman, of England, wrote an essay on the Sea Serpent, and another very interesting one appeared in the London Zoologist severalyears since.

Various accounts have appeared from time to time, corroborating the earlier statements, and it is but a short time since we were informed that a gentleman of the highest respectability, and one known in this city, had seen one on the coast of Ireland. The Rev. Alden Bradford, in a letter to John Quincy Adams, at that time Secretary of the American Academy of Arts and Sciences, says, after calling his attention to statements made under oath at that time by gentlemen of respectability,—"All this evidence, I think, cannot fail to establish the fact that a large sea sepent has been seen in the Penobscot Bay, and that the existence of such a monster could no longer be doubted."

It is not known to what species of fish this monster belongs, neither is it improbable that in ancient times it was known as the "leviathan," (see Isaiah xxvii. 1; Job xxvi. 13.)

The Sea Serpent has been seen at different times near Castine, Me., Booth Bay Harbor, Boar's Head, Hampton Beach, Gay's Head, Mount Desert Rock, St. George's Banks, Portsmouth, N. H.; Plum Island, Newburyport, Duxbury, Lynn, and in other places, by multitudes. We believe it has been seen several times at Nahant, Mass., where it is said to be kept during the summer season, for the benefit of those who resort thither for sea bathing. Mr. Prince, formerly U. S. Marshall, in a private letter to Judge Davis, states that himself, wife and coachman saw the serpent, and concludes that a strange animal exists on our coast.

It is by no means improbable that a species of serpent, huge in proportion, may exist in the seas, although none has ever been captured; the evidence above presented would certainly tend to excite the belief; still, we would (as in the case of the "knockings,") "want the true and veritable avouch of our own eyes," before we could endorse him fully. Many persons, however, are prejudiced against the name of sea serpent," we do not see the reason for this,—as well call it the "sea serpent" as "leviathan," what's the odds? If such an animal exists at all, it is by no means common.

From California.

The Cherokee and Georgia Steamships arrived on the 5th inst. from Chagres, and between the two brought $1,500,000 in gold. The yield of gold is as abundant as ever. The disturbances were smothed down and peace had been restored. Things appear in a very favorable light.

A Cheap Paper.

There are some men who always estimate the value of papers by their size. This shows a remarkable ignorance on their part. There is just as much difference in one paper from another as there is in coarse and fine cloth. A man may purchase five yards of cloth for the same amount that will only purchase one yard of a finer fabric; and would any man of sense suppose that the one yard was less valuable than the five? No. Well it is just the same with papers and periodicals. It is not the amount of paper, nor reading, by which a periodical's value should be estimated, unless it be mere news, and even this comes under our definition of valuation. It is the contents which constitute the true value of a paper.

There are some papers which are far more expensive than others, and of which the public are not always the best umpires. This is the case with scientific and mechanical papers. In America, all our periodicals are cheaper than those in any other part of the world. In France no paper like the Scientific American could be published for twice the sum of our subscription; and in England it would cost as much. The Journal of the Franklin Institute, published monthly, at Philadelphia, costs $5 per annum; the London Patent Journal published weekly, costs 12 cents per number,—the Scientific American costs $2 per annum, and only $1,50 to clubs—the cheapest mechanical paper in the world.

Immoral Publications.

Our excellent cotemporary, the Boston Olive Branch, in referring to an infamous publication which has just been issued by a well-known house in this city, asks, "What shall be done? The answer is plain,—expose them! put them down! brand them with the infamy they deserve, and discourage their preparation, publication and perusal, by all fair and honorable means."

To the last part of this we say amen, with all our heart—we like the sentiment; but we do not endorse the idea that they should be exposed, for in this way the young become curious to know what are regarded as immoral publications, and seek for them with avidity. We received a copy of the work in question, and after ascertaining its character, we concluded not to speak of it at all. Publishers who scatter broad-cast among the editorial fraternity, publications pandering to the vilest sentiments of human nature, do not expect them to be noticed as fit companions for the youthful mind, or as suitable for introduction into the family circle. The more we talk or write about this or that publication as tending to corrupt the moral sensibilities of youth, the more eager they become to learn their contents. The human mind is as "prone to evil as the sparks are to fly upwards," and while the seeds of moral disease are being sown in the community, the minds of our youth are liable to become infected. The Rev. Henry Giles, in a lecture on Books, delivered last winter before the Mercantile Library Association, uttered a sentiment which we have long cherished; it was to the effect that if we wished immoral books to circulate largely, have the ministers preach about them in the pulpit, and editors to write about them in the newspapers: keep silent in regard to them, and they soon die from their own rottenness. We regret that the press should be prostituted to such vile purposes, especially by publishers who claim to be respectable. In this instance we are disposed to be charitable, for we know the publishers deeply regret having any connection with this book.

The India Rubber Patent Case.

Horace H. Day has published a card in the Sun stating that the reports which have been published in some papers about the trial between himself and Mr. Goodyear, at Trenton, N. J., and noticed by us last week, are untrue, and the language attributed to Judge Grier, as expressed by him in the charge, is erroneous. The report of Judge Grier's charge was published in the Herald. It would have been well for Mr. Day to have pointed out the error, and not merely said, "many material things put in were never spoken by Judge Grier, and many left out which were spoken by him, being about as much alike as a cheese and a cart wheel."

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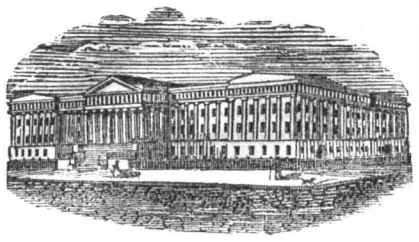

☞Reported expressly for the Scientific American, from the Patent Office Records.

LIST OF PATENT CLAIMS
Issued from the United States Patent Office

FOR THE WEEK ENDING OCTOBER 8, 1850.

To David **Anthony, Sen.**, of Spring Port, N. Y., for improvement in Shanks of Hay-forks.

I claim the constructing the hay, straw and manure forks with two or more tines, in a separate manner and confined in a socket, as set forth in the above specification, or otherwise, substantially the same, in a way and manner so that either of the tines can be taken out of the socket, and another put in its place if necessary.

To Wm. D. Beaumont, of Baltimore, Md., for compound for imparting a gloss to clothes. Ante-dated July 26, 1850.

I claim the within described compound of steraic acid, white wax, spermaceti, and quick lime, prepared as fully set forth.

To George Burnham, of Philadelphia, Pa., for improvement in Presses for copying letters.

I claim the manner in which I have arranged and combined the two plates, or platens, with the two levers and with the steel spring, as set forth, the two plates being made to approach each other by the drawing apart of the levers. The two bolts, that are operated on by said levers, passing through the outer ends of the spring, which is curved, and operates on the curved bottom of the plate, in the manner and for the purpose set forth.

To Alinzor Clark, of Southfield, N. Y., for improvement in Hay-forks.

I claim the manner, substantially as herein described, of forming the tines and fitting them in the stock or handle, so that they can be secured in the stock or handle, either by the wedge shank of the centre tine, or by a detached wedge of similar form, and the pin, so as to make either a two tined or a three tined fork.

To David Eberly, of Strasburg, Pa., for improvement in Seed Planters.

I claim, first, the sliding link, in combination with the lever and the catch, for working the seeding apparatus by the draught of the team, as set forth.

Second, I claim stopping the feeding by slackening the bands, and the simultaneous elevation of the shovels, by the draught of the team, substantially as set forth.

To G. S. Gardner, (assignor to G. S. Gardner & G. Rohr,) of Charlestown, Va., for improved Seeding Apparatus for a seed-planter.

I claim the ratchet-shaped vertically revolving feeding wheels, arranged and operated in the manner and for the purpose herein set forth.

To Geo. Hart, of Dillsborough, Ind., for improvement in mounting the cutters of a mowing machine.

I claim the method of constructing a revolving grass or grain cutter, so as to adapt itself to the varying surface of the ground, by means of hanging it by a universal joint on the end of a shaft adjustable vertically, substantially as herein described.

To Moses Hey, of Springfield, Pa., for improvement in machinery for doubling and twisting yarn.

I claim the stop wires so constructed and connected with the head of the spindle and with the strands of the yarn, that whenever any of the latter are broken or run out, the stop wires shall move and effect the disconnection of the machinery from the moving power, thereby stopping it, substantially as herein set forth.

To Wm. H. Holt, of Hartford, Conn., for improved Kettle for manufacturing Comfits.

I claim the improvement in the manufacture of comfits by apparatus constructed upon the principle herein set forth, and consisting essentially of a pan moved by machinery as herein described.

To T. W. Lane, of Woburn, Mass., for improvement in Gasometers.

I claim the introduction of the secondary shaft, connecting by means of a wheel and pinion with the drum shaft in the interior of the metre case.

Secondly, the arrangement, substantially as shown, by which the gas is passed at once into the interior of the drum, and removing the pressure from the chamber in which is the valve float, or by whatever means this effect is produced.

To John Lee, of Wellsville, Ohio, for improved Eaves-trough and Gutter Machine.

I claim the grooved movable rib, locking down to the mandrel, for the purpose of holding the beaded edges of the sheets while bending and soldering, and rising to allow of inserting and removing the work, substantially as described.

I also claim, in combination with the revolving mandrel, the piece suspended on the journals of the mandrel, and resting when required, on the ledge, substantially in the manner and for the purposes described.

To Edmund Quincy, of Lacon, Ills., for grain and maize Harvester.

I claim the use of the revolving shaft, in combination with a system of fingers, teeth or knives, arranged on the shaft, as described and for the purpose herein set forth, not confining myself to any particular size, shape, or curvature.

To F. M. Ray, of New York, N. Y., for improved Vulcanized India Rubber Spring.

I claim the employment of a ring, rings, or discs, made of any of the preparations of caoutchouc, known under the various appellations of metallic or vulcanized rubber, as a substitute for metal or other kinds of springs heretofore known and used, when such rings or discs, or the equivalents thereof, are applied in manner substantially as herein described, in combination with a series of solid discs or plates, or their equivalents, substantially as herein described, whether made of metal or other solid or non-elastic substance.

I also claim making the surfaces of all or either of the plates above and below, and interposed between the elastic rings or their equivalents, or the surfaces of the elastic rings or either of them convex, substantially in the manner and for the purpose specified.

To Russell Scarritt, of St. Louis, Mo., for improvement in Sofa Bedsteads.

I claim the combination of the frames, which are of the same form as the sofa ends, substantially in the manner and for the purpose herein set forth, to wit, when the back is elevated to convert the sofa bed into a sofa, the frames must be swung inwards against the sofa back to retain it in an elevated position, and to throw the said frames out of the way and out of sight; and when it is desired to change the sofa-bed from a sofa to a bed, the said frames can only be swung outwards, into a line with the sofa ends, so that the ledges on the inner sides of the same will unerringly catch and retain the back, when it reaches a horizontal position, as it is thrown rearwards, in which position the sofa ends and the swinging frames will form an ornamental and uniform head and foot to the bed form of my improved sofa-bed.

To Eli F. Southward, of Wellfleet, Mass., for improved Grummet Strap.

I claim the mode of applying the above described strap by encircling the rope therewith, and stitching or pegging the strap to the canvas, and so applying it as to insert the grummet through the strap and canvas.

To O. Warner & C. S. Gaylord, of Gaylord's Bridge, Conn. for improved Spring Grapple.

We are aware that spring hooks and a set joint have heretofore been employed as a trap, for which device Letters Patent were granted to Thos. A. Davies, in 1849, but his arrangement involves the use of a trigger to operate the joint; our arrangement simplifies the trap in other respects, and does away with the use of a trigger.

What we claim, therefore, is not a set joint, but the arrangement of the tongs-shaped spring talons and set joint, constructed and acting as herein described.

To Nathan Washburn, of Worcester, Mass., for improvement in Cast-iron Car-wheels.

I claim the combination of the arch at the centre with the curved plate and arms or brackets, connecting the hub and rim in the manner and for the purpose set forth.

To J. W Webb, of Aurora, N. Y., (assignor to Benj. Gould,) for improvement in the adiustment of knives in Straw-cutters.

I claim attaching the knives to the permanent arms by means of the pendulous or movable arms rotating on the shaft and secured to the permanent arms by means of screw bolts passing through elongated holes in the movable arms, thereby allowing the cutting edge of the knives to be placed at any required angle necessary for adjusting them to the bed cutter or shear, in combination with the movable box for regulating the mash of the cog of the pinion into those of the wheel, substantially as described.

To Samuel Whitmarsh. of Northampton, Mass., for improvement in Portable Bedsteads and Sacking Bottoms.

I claim the making of a sacking bed of canvas, or other cloth, to be suspended from the edges, the insertion of gores to fit the same to the swell of the body at the shoulders and hips, substantially as described.

And I also claim making the frame of a portable bedstead, substantially as herein described, of a series of posts connected and combined together longitudinally and laterally by braces on the principle of the lazy togs, the said braces being connected with the posts by means of joints and slides, substantially as herein described.

To P. G. Woodside, of Philadelphia, Pa., for improvement in Warm-air Registers.

I claim the manner in which I have combined the screw, racks and segments of pinions, and the application of this combination to the purpose herein described, viz., that of opening and closing the valves of warm-air registers.

To Avery Babbett, of Auburn, N. Y., for improvement in Looms for weaving figured goods.

I claim, first, the arrangement of the machinery for throwing the shuttles as herein described in connection with the arrangement of the machinery for raising and lowering the shuttle boxes; the devices thus arranged occupying the under part of the loom-frame and being more simple, compact and convenient than other arrangements heretofore in use for the same purpose.

2. The winding of the cloth round the beam with uniform tension by increasing the leverage of the tension-weight, M, in proportion as the diameter of the roll of cloth is increased, substantially as herein described.

3. In combination with a positive let-off, I claim the use of a conditional let-off constructed substantially as herein described, whereby when there is an excess of strain on the warp threads an increased quantity of yarn is delivered from the yarn-beam; such conditional increased delivery of the yarn ceasing whenever the proper strain on the warp thread is restored.

4. The preventing the opening and closing of the shed from producing an increased or diminished strain upon the warp threads, by means of the rugular and positive advance of the let-off rolls toward the harness through an invariably equal distance at every opening of the shed and by their return through the same distance at every delivery of the shed, substantially as described.

5. The causing the loom to throw itself out of gear whenever a shuttle fails to go into its proper box at the proper time, and whenever the connection formed by any weft thread between its shuttle and the cloth is not maintained during the whole of the passage of that shuttle through the weft thread, by the operation of the hooks combined with each other and attached to the bed of the lay, substantially as described, the hooks being in the latter case combined with wires or prongs for the reception of the weft thread, substantially as described and operated by the passage of the shuttle into the shuttle box, substantially as described.

6. Forming and breaking, in any required order, the connection between the draught boards respectively and the machinery that works them, by means substantially such as are herein described; this method of working the draught boards admitting of a more simple, compact and convenient arrangement of the machinery than others before used to attain the same end.

7. The combination of a rising and fal'ing jacquard frame, with the draught boards, substantially as herein set forth; whereby the depression of the frame will be simultaneous with the elevation of a part of the draught boards, and the elevation of the frame with the depression of a part: the one in this manner aiding in working and equipoising the other.

8. Elevating and depressing the harness and draught-boards by the simultaneous elevation or depression of all the knot-boards for the purpose of opening the sheds in looms for weaving figured fabrics when these knot-boards are arranged above the draught-boards as herein described.

9. In connection with the movement of the pent of the jacquard to which the harness is attached, substantially as described, I claim the arrangement of the harness and of the moving parts of the jacquard and of their connections with the lower part of the loom, substantially as described, in such manner that at the time when the loom is to be thrown out of gear the weight of the harness and of those parts and connections shall oppose the greatest possible resistance to the momentum of the loom.

10. I claim the use as a part of the jacquard machine of the combination of machinery herein before described, as shown in fig. 4 of the accompanying drawings, each combination consisting of the two slides, Y, the two springs, Z, and the two needles, Q, constructed substantially as described and operating so as to permit the draught-board to come down without crowding out the cylinder or prism, substantially as described.

[It is now four years since we were in Auburn; at that time, Mr. Babbett was just beginning to erect some of his looms in Barber's new factory; since they have gone into operation, we have heard very flattering accounts of their superior action and good qualities.

Battin's Coal Breaker, and Bone Machinery.

NEWARK, N. J., Oct. 10, 1850.

GENTS.—My attention was called this day to an article in your valuable paper of the 5th inst., on Battin's patent Rollers, for breaking coal or other hard substances. You remark that you have somewhere seen the same kind of rollers used for other purposes, prior to 1843, and you thought that they were used for breaking bones before grinding. You are partially correct in your inference, yet not altogether, provided my knowledge of the subject is as correct as I think it is. I was engaged in grinding bones for manure from June, 1841 to August, 1844, and used a mill made for that purpose in England, and set up by my uncle, Capt. D. S. Ogden, in the old mill in South Brooklyn, known as "Cole's Mill," near the penny bridge. The rollers used were two, consisting of fillers and cutters placed alternately on a shaft and working into each other, turned by a tide wheel. One set of rollers were made of teeth 1¼ inches wide, cutter 1¼ inches thick, and fillers 1 inch in thickness. Another set, much smaller, were used, placed below the larger; the mode of working was by feeding the bones from a hopper, in the second story, to the upper set, thence falling through to the smaller, passing through them to a shoe, into elevators, by which they were carried to the third story and deposited in a cylindrical screen, which was ¾ inch meshes, placed at an angle of 45 degrees. All that would pass this screen was considered ground, the remainder passed down a gutter again to the cutters.

I have never known of but one other kind of mill for grinding bone, which was made and used in Connecticut, and consisted of two cast iron plates, about 4 or 5 feet in diameter, with teeth set in them in circles, the upper plate working in the lower and fed in the centre, in the manner mill stones usually are; this, however, worked too slow for my purpose.

You can probably see the kind of mill as used by myself in the bone factory of John Thornby, foot of 13th street, New York city, provided he has not moved since 1844.

JAMES C. OGDEN.

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TO CORRESPONDENTS.

"J. R, of Mich."—The numbers of Scott's work cannot be obtained in this city; all that are now imported into this city are bound in two volumes.

"J. F. L., of Ohio."—Packages can be sent to Troy by express, but we cannot tell how much they would charge for transportation. Silliman's Journal or the Franklin Journal are good publications, price $5, monthly. The dictionary of machines you will find to be a good work, price $10. You can subscribe for either of the above through us.

"E. M, of Ind."—The article you want cannot be obtained in Cincinnati.

"J. F. C., of Ala."—Your letter will be attended to as soon as possible. You will bear with a little delay as just now we are very much hurried.

"J. L. N., of S. C."—Shall hope to furnish you information about the flues soon.

"W. P. L., of Tenn."—We hope you received our advices of the 3d inst., and found them satisfactory. We could make no other proposition.

"W. H., of Ind."—Has your suit come off yet, and how does it stand? Will you get damages for the second locomotive? We should like to hear the result.

"G. D., of Ohio."—Your hinge appears to be new and patentable,—we have never seen one like it. You will have to get up a neat small model of the gate and hinge first, if you want to apply for a patent.

"D. P. G., of Ind."—Did you get our letter? We stated in it that we could not see where to base a claim upon your construction of chimneys. Jams have been made of every variety of depth and shape, and the throat has been made of various widths. There are no patents in existence on the subject. We don't think you can get a patent.

"A. K., of Vt"—Your fine list of subscribers (20) we have entered upon our books and forwarded the back numbers to each as directed. We have also entered your name for a copy of our work on "propellers" which will be forwarded by mail as soon as issued.

"S. W., of Mass."—Could you not mix copal varnish and dissolved india rubber? Some of the mixtures of gutta percha would suit you exactly. You don't need caoutchine for your purpose; cowdee would not answer. You want to know how to mix copal with spermaceti. Try copal varnish heated and some soda in it, and then add the spermaceti. Gutta percha varnish appears to be the very thing you want. This substance can be dissolved in ether and chloroform. We have given you all that we know of it. Caoutchine cannot be got here.

"S. W., of Mass."—It is stated that chloroform would dissolve *gutta percha*. If you dissolve copal in pure turpentine and soda, you can then add oil and all will mix—this is an inference—judging from our chemical knowledge. The caoutchine is a solvent of india rubber.

"H. J., of Ind."—Your subscription will not expire until No. 26; we send the paper to you regularly every week.

"W. H. L., of Miss."—The precise day on which the Fair opens has not yet been fixed,—we shall give due notice of it. We are very much obliged for the fine list of subscribers: there was one more than you counted—the $5 extra covered all our charges. We sent all the numbers we had of Vol. 4.

W. & Co., of Ohio."—We do not know who has the management of Nasmyth's or Kirk's Steam Hammer; the latter was formerly made, we believe, in Reading, Pa. We have written to three concerns, with a view of obtaining information for you, but have been unsuccessful.

"J. G., Jr., of St. Johns, N. F."—Your letter was answered through Mr. Fuller, our Halifax Agent.

"Bramble Brae, of Va."—We are much obliged to you for your kindness.

"S. L., of N. Y."—Your article along with others, is awaiting an opportunity for its publication.

"T. H. W., of Conn."—Your article is not acceptable—it is too long, and the subject is not of any practical benefit to our readers.

"A. F., of Md."—We know of no instrument patented for the purpose you speak of.—We could not tell the price until we knew what work was to be done—some are far more troublesome than others. The Patent Office fee is $30.

"P. A. S., of Pa."—We do not see any part of your design that could be patented. By placing a handle on one of your pulleys, and inverting it, you have a common india rubber disc pump, which is in use in this city

"J. C., of N. Y."—A patent could not be obtained for glass as applied for roofs, as it has been used for this purpose in more than one case. If you have a plan of dovetailing the glass to make a new and good joint, you might get a patent for that, but not for the thickness of the glass nor its use; we have seen a whole street covered with a roof of glass.

"R. P., of Mass."—We will have something for you in a few weeks.

"A. W. M., of Ohio."—If you send money to pay our expenses we will then get the information you want—it is not right to ask, for nothing, that which entails expense upon us.

Money received on account of Patent Office business, since Oct. 7, 1850:—

G. W. H., of N. Y., $25; A. N. of N. Y., $30; S. T. S., of Mass., $25; J. C. S., of Conn., $26; J. R., of O., $13; J. & B., of Vt., $25; T. R. B., of N. Y., $25, and L. & R., of N. Y., $20.

The specifications, drawings and models of inventions, belonging to parties of the following initials, have recently been forwarded to the Patent Office:—

P. G. E., of N. Y.; L. & R., of N. Y.; J. & B., of Vt.; J. R., of O.; J. C. S., of Conn., G. W. H., of N. Y.; J. H. T., of N. Y.; J. L. P., of Mass.; W. H. H., of Conn., and A. W. P., of Ohio.

Kennedy & Prentice, of Conn.; Dr. Chas. Rodgers, of Wis.; Scott & Tanahell, Phila.—We are waiting patiently for the papers which were forwarded to you for executing, some time since.

Bound Vol. 5, Now Ready.

Those desiring Volume 5 of the Scientific American are informed that we are able to furnish a few complete volumes, bound, at $2,75 each. Also, we can send by mail sets complete, minus No. 1 for $2. Volume 4, incomplete sets, comprising about 35 Nos., will be forwarded by mail on receipt of $1.

Patent Claims.

Persons desiring the claims of any invention which has been patented within fourteen years can obtain a copy by addressing a letter to this office; stating the name of the patentee, and the year the patent was granted (adding the month of the year when convenient), and enclosing one dollar as fees for copying.

Important Notice to us!

Whenever any of our friends order numbers they have missed—we shall always send them, if we have them on hand. We make this statement to save much time and trouble, to which we are subjected in replying, when the numbers called for cannot be supplied.

ADVERTISEMENTS.

Terms of Advertising:

One square of 8 lines, 50 cents for each insertion.
" 12 lines, 75 cts., " "
" 16 lines, $1,00 " "

Advertisements should not exceed 16 lines, and cuts cannot be inserted in connection with them for any price.

RAILROAD CAR MANUFACTORY.--TRACY & FALES, Grove Works, Hartford, Conn. Passage, Freight and all other descriptions of Railroad Cars, as well as Locomotive Tenders, made to order promptly. The above is the largest Car Factory in the Union. In quality of material and in workmanship, beauty and good taste, as well as strength and durability, we are determined our work shall be unsurpassed. JOHN R. TRACY,
5 tf. THOMAS J. FALES.

BACK VOLUMES OF THE FRANKLIN JOURNAL, from 1828—fifteen bound and six unbound, can be had upon application at this Office; price $1,50 per volume. They are owned by a poor mechanic, who thinks he is unable to keep them. 1

FOWLERS & WELLS, Phrenologists and Publishers, Clinton Hall, 131 Nassau st., New York—Office of the Water Cure and Phrenological Journals. Professional examinations day and evening. 3 6m

PROSSER'S PATENT LAP-WELDED Boiler Tubes—Diameter, Number and Length of each at date:—

Inches.	In Stock.		Afloat.
1 1-4	6789	7-0	——
1 1-2	160	10-6	120
1 3-4	——	10-6	144
2	215	10-0	——
2	1618	12-0	——
2	1277	15-0	——
2	55	4-9	——
2	77	4-10	——
2 1-4	735	15-0	——
2 1-2	518	15-0	——
2 3-4	458	15-0	——
3	193	15-0	——
4	3	15-0	18
5	1	15-0	——
6	14	15-0	——

THOS. PROSSER & SON, Patentees,
October 15, 1850. 28 Platt st., New York.

Patent Office.

128 FULTON ST.

NOTICE TO INVENTORS.—Inventors and others requiring protection by United States Letters Patent, are informed that all business relating to the procuration of letters patent, or filing caveats, is transacted at the Scientific American Office, with the utmost economy and despatch. Drawings of all kinds executed on the most reasonable terms. Messrs. Munn & Co. can be consulted at all times in regard to Patent business, at their office, and such advice rendered as will enable inventors to adopt the safest means for securing their rights.

Arrangements have been made with Messrs. Barlow and Payne, Patent Attornies, in London, for procuring Letters Patent in Great Britain and France, with great facility and dispatch.

MUNN & CO.,
128 Fultonstreet, New York.

AMERICAN AND FOREIGN PATENT AGENCY.

WE WOULD remind our numerous friends throughout the country, that we still continue to conduct the business of procuring Letters Patent for new inventions in this and all foreign countries, where the right is recognized. Since making arrangements with those eminent attorneys, Messrs. Barlow, Payne & Parken, Editors of the London Patent Journal, we have secured and managed through them, several foreign applications, with the utmost economy and facility. Inventors and others, desiring advice upon this subject, can correspond confidentially with the Editors of this paper.

WOODWORTH'S PATENT PLANING Machine 1850 to '56.—Decisions had the present year in the U. S. Courts, in every part of the Union, having fully and finally established all the claims of the Woodworth Patent, the subscriber is prepared to dispose of rights to use the machine in the Counties of Queens, Richmond, Rockland, Suffolk, Westchester, and the other unoccupied Counties and Towns in the State of New York and in Northern Pensylvania. Ninety-nine hundredths of all the planed lumber used in our large cities and towns continue to be dressed with Woodworth's machines, which may be seen in constant operation in the steam planing mills in New York, Brooklyn, Williamsburgh, Albany, Troy, Utica, Rome, Syracuse, Rochester, Lockport, Buffalo, Elmira, Gibson, Owego, Ithaca, Binghamton, &c. &c. Persons holding licenses from the subscriber are protected by him against infringements on their rights. JOHN GIBSON,
4 5* Planing Mills, Albany, N. Y.

DUPLICATES OF DRAWINGS.--One hundred or more copies of the drawings required by the Patent Office, can be furnished at short notice, and upon reasonable terms, by MUNN & CO., Scientific American Office, who have made arrangements to duplicate drawings of machinery and inventions, at prices varying from ten cents per copy, upwards.

PATENT METALIC OIL FOR MACHINERY—Warranted not to gum. Manufactured under Cumberland Brothers patent (April 6th 1849), by C. E. de la Vergne & Co., Elizabethport, N. J. Transparent metalic, adapted to light bearings, spindles, &c., will last a quarter longer than pure sperm. For burning will be found superior. Fluid White Metalic, of the consistance of cream, to be used without wick and tube, adapted to the oiling of engines, shaftings, &c. will last twice as long as pure sperm oil. Hard White Metallic, to be used instead of tallow, will last three times as long; when used in cylinders, the packing must be renewed. Blue Metallic grease, prepared for greasing the inside of boilers when thoroughly cleaned, that the scale which afterwards collects may be removed with one third the usual time and expense. It is also adapted to the greasing of cog wheels; and for the axels of vehicles it has been found to last more than four times as long as any grease ever used for that purpose.

KENNEDY & GELSTON, Sole Agents,
50 3m No. 8 Pine st. New York.

12 POWER PLANING MACHINES.—SCRANTON & PARSHLEY, New Haven, Conn., have now finishing off 12 power Planers that will plane 8 feet long, 27 inches wide and 24 inches high; these planers are of the first quality, are self-feeding every way; the table is worked by a rack and pinion; the bed is 12 feet long. With each planer there is a splining head and counter shaft, pullies and hangers. They weigh about 4000 lbs.; the price, boxed and ready to ship, is $625. Also 12 hand lathes, with back gear on iron shears, and legs 7 feet long, swing 20 inches, about 700 lbs. weight—$75. These lathes are of the first quality. 1tf

FACTORY AND WATER POWER---For rent or sale.—A factory building in New Brighton, Beaver Co., suitable for woollen or cotton factory, 40 by 96 feet, three stories high, with plenty of water power. The driving power is now being made new, and if applied for soon, can be made to suit the renter. Apply to A. W. TOWNSEND, near the premises, or to J. W. GILL, Wheeling, Va. 3 8*

TO IRON FOUNDERS, &c.—Fine ground and bolted Foundry Facing, viz.: Sea Coal, Charcoal, Lehigh, Soapstone, and Black Lead. Fire Clay, Fire Sand, Keold and Fire Mortars; also Iron and Brass Founder's superior Moulding Sand, in barrels, or otherwise, for sale by G. O. ROBERTSON, New York. City Office 4 Liberty Place, Maiden Lane, near the Post Office. 3 4*

COTTON LOOMS.---100 second-hand 4-4, have been well used but a short time, modern pattern, and as good as new; they will be sold low to close a concern, and can be seen at any time upon application to S. C. HILLS, Machinery Agent, 12 Platt st., N. Y. Letters must be post- aid. 3 4

DR. STEWART'S SAFETY FLUID LAMP—Rights for any of the States, or for the whole United States, for this valuable Lamp, patented July, 1850, are now offered for sale on the most liberal terms. Land, or good trade, will be taken in part payment. Dr. FRANK STEWART, Swaim's Laboratory, Seventh st., below Chestnut, Phila. 3 4

ALCOTT'S CONCENTRIC LATHES.—We have on hand a few of these celebrated Lathes, which the inventor informs us will execute superior work at the following rates:—

Windsor Chair Legs and Pillars, 1000 per 11 hours. Rods and Rounds, 2000; Hoe Handles, 800; Fork Handles, 500; Broom Handles, 150, per 11 hours.

This Lathe is capable of turning under two inches diameter, with only the trouble of changing the dies and pattern to the size required. It will turn smooth over swells or depressions of 3-4 to the inch, and work as smoothly as on a straight line, and does excellent work. Sold without frames for the low price of $25—boxed and shipped, with directions for setting up. Address, (post paid). MUNN & CO.,
14tf At this Office

A CARD.---The undersigned begs leave to draw the attention of architects, engineers, machinists, opticians, watchmakers, jewellers, and manufacturers of all kinds of instruments, to his new and extensive assortment of fine English (Stubs) and Swiss Files and Tools, also his imported and own manufactured Mathematical Drawing Instruments of Swiss and English style, which he offers at very reasonable prices. Orders for any kind of instruments will be promptly executed by F. A. SIBENMANN. Importer of Watchmakers' and Jewellers' Files and Tools, and manufacturer of Mathematical Instruments, 154 Fulton street. 1 3m*

TO PAINTERS AND OTHERS.—American Anatomic Drier, Electro Chemical graining colors, Electro Negative gold size, and Chemical Oil Stove Polish. The Drier, improves in quality, by age—is adapted to all kinds of paints, and also to Printers' inks and colors. The above articles are compounded upon known chemical laws, and are submitted to the public without further comment. Manufactured and sold wholesale and retail at 114 John st., New York, and Flushing, L. I., N. Y., by
QUARTERMAN & SON,
48tf Painters and Chemists

COTTON, WOOLEN AND SILK MANUFACTURERS' DEPOT.—ANDREWS & JESUP, No. 70 Pine st., N. Y., dealers in articles for the use of Cotton, Woolen and silk manufacturers, and agents for the sale of shearing, carding, burring, napping, wool-picking, flock-cutting and waste machines, regulators, satinet and jean warps, &c. Weavers' reeds and heddles, bobbins and spools, of every description, made to order. Sperm, lard and olive oils and oil soap. 1tf

WOOD'S PATENT SHINGLE MACHINES—These excellent machines, illustrated and described in No. 23, Vol. 5, Scientific American, are offered for sale in Town, County and State Rights, or by single machines. There are three sizes, the first cuts an 18 inch shingle, price, $100; 2nd cuts 24 inch, price $110; 3rd, 28 inch, $120. Orders addressed to J. D. Johnson, Redding Ridge, Conn., or to Munn & Co., "Sci. Am." Office, will meet prompt attention.

The above machine can be seen in successful operation at P. R. Roach's mills, No. 138 Bank st., this city. 51t

MACHINERY.—S. C. HILLS, No. 12 Platt Street, N. Y., dealer in Steam Engines, Boilers, Iron Planers, Lathes, Universal Chucks, Drills Kase's, Von Schmidt's, and other Pumps, Johnson's Shingle machines, Woodworth's, Daniel's and Law's Planing machines, Dick's Presses, Punches, and Shears; Morticing and Tennoning Machines, Belting, machinery oil; Beal's patent Cob and Corn Mills; Burr Mill, and Grindstones, Lead and Iron Pipe, &c. Letters to be noticed must be post paid. 40tf

MATTEAWAN MACHINE WORKS:—Locomotive Engines, of every size and pattern. Also tenders, wheels, axles, and other railroad machinery. Stationary engines, boilers, &c. Arranged for driving cotton,, woolen and other mill. Cotton and woolen machinery of every description, embodying all the modern improvements. Mill geering, from probably the most extensive assortment of patterns in this line, in any section of the country. Tools, turning lathes, slabbing, plaining, cutting and drilling machines. Together with all other tools requried in machine shops. Apply at the Matteawan Co. Work, Fishkill Landing, N. Y., or at No. 66 Beaver st. New York City, to
40tf WILLIAM B. LEONARD, Agent.

WOODWORTH'S PLANING MACHINE—For sale, the right to use this justly celebrated labor-saving machine in the following States, viz. Pennsylvania west of the Allegheny Mountains, Virginia west of the Blue Ridge, Ohio, Indiana, Kentucky, Tennessee, Wisconsin, Iowa, Missouri, Arkansas, Texas, Louisiana, Florida, Alabama and Mississippi. For particulars apply to the Proprietor, ELISHA BLOOMER, 304 Broadway. 51 tf

BRUSH'S IMPROVED DOUBLE-ACTING LIFT AND FORCE PUMP.—From the increased facilities of the subscriber, he is now prepared to furnish, at a reduced price, the most effectual, powerful, durable and yet simple Lift and Force Pump in use. For a house pump, factories, breweries, railroad stations, or any other purpose where a constant stream of water is required, they cannot be surpassed. The public are cautioned against an article purporting to be Brush's Pump, but are invited to call at or address 83 Pike Slip, and get the original. J. A. BRUSH, Inventor. 49 3m*

BURR MILL STONES.—We have made arrangements which will enable us to supply all kinds of French Burr, Holland and Esopus Mill Stones of the best material and manufacture, at the lowest prices. Burr Mill Stones made to order and warranted to be of the best quality; Burr Blocks for sale.—Orders addressed to MUNN & CO., post-paid, at this Office, will meet with prompt attention. 41tf

FOREIGN PATENTS.—PATENTS procured in GREAT BRITAIN and her colonies, also France Belgium, Holland, &c., &c., with certainty and dispatch through special and responsible agents appointed, by, and connected only with this establishment.—Pamphlets containing a synopsis of Foreign Patent laws, and information can be had gratis on application
JOSEPH P. PIRSSON, Civil Engineer,
46tf Office 5 Wall street, New York.

BOSTON LOCOMOTIVE WORKS---No. 380 Harrison avenue, Boston, manufacture at short notice, Locomotive and Stationery Steam Engines, boilers,—iron, copper, composition and brass castings; copper work; Van Kuran railroad car and truck wheels, and all kind of railroad machinery.
DANIEL F. CHILD,
1tf Treasurer Boston Locomotive Works.

UNITED PATENT OFFICE IN PARIS AND LONDON.---GARDISSAL & CO., 29 Boulevard St. Martin, Paris, and No. 9 Arthur st. west, city, London. Patents procured in Great Britain and on the Continent: "Le Brevet d'Invention," weekly journal, published by the same firm. 3 4eow*

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Scientific Museum.

To Remove Incrustations from Boilers.

We have received not a few communications on this subject, lately; some want to know how to remove incrustations, and others how to prevent the formation of them. If rain water was exclusively used for boilers, there would be no incrustations, but this is impossible in almost every case where a steam boiler is used. All mineral waters contain salts, which are mechanically held in solution. These salts are deposited in the boiler by the evaporation of the pure water in a state of steam. With the best of care, incrustations will sometimes form on boilers. They are dangerous and expensive deposits, because, being non-conductors of heat, they waste an immense amount of fuel, and they have sometimes, it is said, been the cause of explosions. Water used for feed from a well on a limestone strata, is peculiar for depositing scale. We know of a boiler which had to be cleaned every month; at first this was chipped off with hammer and chisel, but this was a tedious process. A weak acid was then used, but this was found to injure the metal, and it was abandoned. Salamoniac was then introduced along with the water, and it was found to answer well, but it was expensive; however, it was a saving in comparison with allowing the incrustations to form, and then losing one day every month in a factory for cleaning out. Potatoes are said to be good to prevent deposits, and mahogany sawdust has been patented for the same purpose, by Messrs. Barnum & Barnard. M. Delfour, of Paris, took out a patent four years ago for the following composition, to prevent incrustations:—12 ounces muriate and 2½ hydrate of soda, with ½ of an ounce of sub-carbonate of potash, and the same of catechu. This amount was to serve for a horse power for 336 hours. To prevent incrustations, the boilers should be frequently blown out; and small leaden bullets, placed in the boiler, have done, it is said by some engineers, essential service. They roll and prevent the formation of the scales. One thing should be particularly observed, viz., the hard scale is formed in the cooling, not when the boiler is hot.

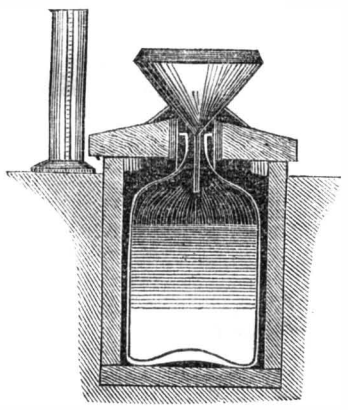
The following are the directions given by Bourne for the removal of scale:—

"Lay a train of shavings along the flues, open the safety valve to prevent the existence of any pressure within the boiler, and light the train of shavings, which by expanding rapidly the metal of the flues, while the scale from its imperfect conducting power can only expand slowly, will crack off the scale; by washing down the flues with a hose the scale will be carried to the bottom of the boiler, or issue with the water from the mud-hole doors. This method of scaling must be practised only by the engineer himself, and must not be intrusted to the firemen, who in their ignorance might damage the boiler by over-heating the plates. It is only where the incrustation upon the flues is considerable, that this method of removing it need be practised; in other cases the scale may be chipped off by a hatchet-faced hammer, and the flues may then be washed down with a hose in the manner before described. In tubular boilers a great deal of care is required to prevent the ends of tubes next the furnace from becoming coated with scale. Even when the boiler is tolerably clean in other places the scale will collect here, and in many cases where the amount of blowing off previously found to suffice for flue boilers has been adopted, an incrustation five-eighths of an inch in thickness has formed in twelve months round the furnace ends of the tubes, and the stony husks enveloping them have actually grown together in some parts so as totally to exclude the water. When a boiler gets into this state the whole of the tubes must be pulled out."

Distances Across the Ocean.

The nearest geometrical distance between Liverpool and the North American ports, is traced to the great curve which sweeps by Cape Clear, in Ireland, and Cape Race, in Newfoundland, and thence down the coast to the various ports alluded to. The distance to Cape Race, which is a common one to all the ports, measured carefully on a globe, in round numbers, is 33 degrees, or 1,980 marine miles. From Cape Race to the different ports—or, more strictly, to the entrances, on the sea coast, of the several harbors—the distances are as follows, viz: To Halifax 390 marine miles; to Boston 840; to New York 990; to Philadelphia 1050; to Norfolk 1190. Hence the total distances from Liverpool are: To Halifax 2,370; to Philadelphia 3,030; to Norfolk 3,150. Bostan is 45 miles further than Halifax; New York 600 miles further; Philadelphia 660; Norfolk 780.

The Rain Gauge.



This is an instrument for measuring the depth of rain that falls. A very simple and excellent instrument for this purpose is shown above. It consists of a copper funnel, from 5 to 7 inches in diamster. The rain being collected in a glass bottle it should be placed in a small stand near the surface of the ground, to protect the bottle from the action of the sun. The amount of rain fallen in a given time is measured in a graduated glass jar, one-tenth the area of the funnel, similar to that shown in the figure, and so divided that every inch in depth of the tube shall indicate one-tenth of an inch falling in the funnel. The amount of rain falling can be measured by such an instrument to 1-5000th part of an inch, or even less.

Coke.

The most valuable of the secondary products of a gas establishment is coke; the best kind is obtained from coal when carbonized in large masses, in ovens constructed on purpose. In a gas manufactory, the production of coke being of minor importance to the formation of good gas, it is generally of an inferior quality to that made in coke ovens, where it is the primary, and indeed sole object for which the coal is carbonized. But gas-coke is excellent for many purposes in the arts and manufactures, producing as clear a fire as that of the first quality, though it is neither so lasting nor so free from slag: for domestic use, however, it is unobjectionable, and may be burnt both in the drawing-room and kitchen with economy and comfort.

The distinguishing characters of good coke are, first, a clean, granular fracture in any direction, with a pearly lustre, inclining to that exhibited by cast iron. Secondly, density, or close proximity of its particles, which adhere together in masses, and specific gravity of 1·10, or rather higher. Thirdly, when exposed to a white heat, it consumes entirely away, without leaving either slag or ashes.

It is invariably the case that the quality of the coke is inversely as that of the gas. The manufacturer must not expect to produce *both* of the best quality. The process by which the best gas is made generally leaves the coke light, spongy, and friable, although an increase of quantity is gained: for the simple reason, that the degree of heat and other circumstances required to form perfect coke, must be entirely changed when gas of a high specific gravity is to be obtained. Thus large masses of coal exposed to a red heat in close vessels are acted upon by slow degrees, the external portions preventing heat from penetrating into the interior until most of the bituminous portions are given off in condensable vapour, or as charcoal and free hydrogen; the after-products being light carburetted hydrogen, carbonic oxide, and carbonic acid gasses. The residue is a carbon of a dense granular composition.

Scientific Memoranda.

METHOD OF HARDENING OBJECTS IN PLASTER OF PARIS, AND RENDERING THEM LIKE MARBLE.

Take 2 parts of stearine, 2 parts Venetian soap, 1 part pearlash, and 24 to 30 parts of solution of caustic potash. The stearine and soap are cut in slices, mixed with the cold lye and boiled for about half an hour, constantly stirring. Whenever the mass rises a little cold lye is added. The pearlash, previously moistened with a little rain-water, is then added, and the whole boiled for a few minutes. The mass is then stirred until cold, when it is mixed with so much cold lye that it becomes perfectly liquid, and runs off the spoon without coagulating and contracting. Before using this composition, it should be kept for several days well covered. It may be preserved for years. Before applying it to the objects, they should be well dusted, the stains scraped away, and then coated by means of a thick brush with the wash, as long as the plaster of Paris absorbs it, and left to dry. The coating is then dusted with a leather or soft brush. If the surface has not become shining the operation must be repeated.

GOLD IN CALIFORNIA.

The Weekly Alta Californian publishes a communication of a gentleman who had lately returned from a visit to the Southern gold mountains. He says that the reports concerning the richness of the gold deposits there are well founded, as he has himself proved upon personal examination. The party to which he belonged brought a number of superb specimens to San Francisco, which were examined by hundreds of its citizens. A company has taken possession and commenced working the mine. A large amount of machinery and provisions have been taken to the spot, and those engaged in the enterprise have determined not to dispose of shares in the stock, but to retain every fraction of it possible.

Speaking of the country through which he passed to reach the "gold mountains," he describes it as a vast and desolate wilderness of burning sands and almost irrespirable winds. Boundless sand plains surround the spot,—scorching and prostrating all who are exposed to them. The soil is so strongly infused, in many places with various alkaline properties, that the crust of the surface is strong enough to bear a man's weight.

ENGINEERING BLUNDER.

A very remarkable engineering blunder has caused the entire destruction of a dry dock built near the Mole of Naples, at an outlay of some $150,000. The whole fabric fell in, from the pressure of water, fortunately when no workmen were on the works. The blame is attributed to Prince Ischitella, the Minister of War. It appears the king had been warned by some Neapolitain engineers that the walls were too slight; and for some time past, the works were pronounced as unsafe by more than one English gentleman, whose professional knowledge at once discovered the error. Had the accident taken place a short time earlier than it did, hundreds of lives would have been lost.

ANCIENT RELICS IN A COPPER MINE.

The Lake Superior News states that a copper arrow-head and a piece of human skull, and other bones, have lately been found in the ancient Indian Diggings on the Ontenagon river. Several instruments resembling chisels, having sockets like the common carpenter's chisel, and small gads and wedges have also been discovered in the Minesota Mine. Besides these things, a stick of oak timber, about 10 feet in length, and 8 or 10 inches in diameter, having short limbs two feet apart and at nearly right angles with each other, was taken out of one of the ancient "pits" or shafts of the Minesota mine, about 27 feet below the surface. It is, from its appearance, and the fact of its having been found standing nearly upright, supposed, with good reason, to have been used as a ladder by the ancient miners Around and over the stick were rocks and earth, with large trees growing over it, and it is probable that many centuries have elapsed since the ladder was placed there.

POWERFUL DRUG.

The Academy of Science, in Paris, has appointed a commission to ascertain the remedial powers of a drug, which, under the name of Cedran, has been introduced for the cure of hydrophobia, and of diseases produced by action upon the nervous system. It is said to have the property of counteracting the poison of the rattlesnake and all venomous reptiles.

Cool Impudence.

A certain literary gentleman, in this city, is in the habit of calling on us regularly for the purpose of reading the Scientific American; but to furnish him with such valuable information without cost is not sufficient, for he now requires us to furnish a *segar* to smoke whilst perusing that valuable sheet. After reading the last number, he thanked us very politely, and said, "it is the most interesting paper published in the United States." *Query*—Why don't he subscribe? the price is only $2 per annum.—[Carruther's Advertiser, Savannah, Geo.]

Accounts from the southern portions of Kentucky represent the tobacco crop as greatly injured by the late frost.

LITERARY NOTICES.

DICTIONARY OF MECHANICS AND ENGINE WORK—Number 19 of this work, published by D. Appleton & Co., Edited by Oliver Byrne, contains articles on Glass, Gold, Governors for Machinery. &c., and is otherwise a good number.

BOURNE'S CATECHISM OF THE STEAM ENGINE.—A new edition of this incomparable book has just been published by D. Appleton & Co., N. Y. This new edition contains some valuable tables not found in any of the others. We need not say a word to recommend this work. It is well known as the only book of the kind published, and this is the best edition.

WAVERLY MAGAZINE—Published by Moses A. Dow, Boston; price $3 per annum. This is one of the most elegant quarto literary journals that we have ever seen; the typography is most beautiful, and the mechanical execution is not surpassed by any newspaper in America, while for choice family reading it has scarcely an equal. We understand it has already obtained a large circulation.

NEW PROSPECTUS (OF THE)

SCIENTIFIC AMERICAN.

TO MECHANICS, INVENTORS, AND MANUFACTURERS.

The Publishers of the SCIENTIFIC AMERICAN respectfully give notice that the SIXTH VOLUME of this valuable journal, commenced on the 21st of September, offering a favorable opportunity for all to subscribe who take an interest in the progress and developement of the Mechanics' Arts and Manufactures of our country. The character of the SCIENTIFIC AMERICAN is too well known throughout the country to require a detailed account of the various subjects discussed through its columns.

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Any person sending us three subscribers will be entitled to a copy of the "History of Propellers and Steam Navigation," re-published in book form—now in press, to be ready about the 1st of October. It will be one of the most complete works upon the subject ever issued, and will contain about ninety engravings

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